

## **Attachment A: Flow Frequency Memorandum**

# MEMORANDUM

## DEPARTMENT OF ENVIRONMENTAL QUALITY Piedmont Regional Office 4949-A Cox Road Glen Allen, Virginia 23060

**SUBJECT:** Flow Frequency Determination/303(d) Status  
Montross-Westmoreland WWTP – VA0072729

**TO:** Janine Howard

**FROM:** Jennifer Palmore, P.G.

**DATE:** February 11, 2011

**COPIES:** File

The Montross-Westmoreland Wastewater Treatment Plant discharges to Ruin Branch near Montross, VA. The discharge is located at rivermile 3-RUN000.48. Flow frequencies have been requested at this site for use in developing effluent limitations for the VPDES permit.

The flow frequency was determined by drainage area proportion between the discharge point and the USGS gauge on Cat Point Creek (#01668500). The flow frequencies are presented below.

### Cat Point Creek near Montross, VA (#01668500):

Drainage area = 45.6 mi <sup>2</sup>	
Statistical period = 1943-1999	
1Q30 = 0.00 cfs	High Flow 1Q10 = 4.9 cfs
1Q10 = 0.00 cfs	High Flow 7Q10 = 6.8 cfs
7Q10 = 0.05 cfs	High Flow 30Q10 = 14 cfs
30Q10 = 0.58 cfs	HM = undefined
30Q5 = 1.3 cfs	

### Ruin Branch at discharge point:

Drainage Area = 1.91 mi <sup>2</sup>	
1Q30 = 0.00 cfs (0.00 MGD)	High Flow 1Q10 = 0.21 cfs (0.13 MGD)
1Q10 = 0.00 cfs (0.00 MGD)	High Flow 7Q10 = 0.28 cfs (0.18 MGD)
7Q10 = 0.00 cfs (0.00 MGD)	High Flow 30Q10 = 0.59 cfs (0.38 MGD)
30Q10 = 0.024 cfs (0.016 MGD)	HM = undefined
30Q5 = 0.054 cfs (0.035 MGD)	

This analysis does not address any withdrawals, discharges, or springs lying between the gauge and the discharge point. The high flow months are December through May.

During the 2010 305(b)/303(d) Water Quality Assessment, the tributaries of Cat Point Creek, including Ruin Branch, were considered Category 2A waters ("Waters are supporting all of the uses for which they were monitored.") The Aquatic Life Use is considered fully supporting and the Recreation-, Fish Consumption-, and Wildlife Uses were not assessed.

The nontidal Cat Point Creek watershed is classified as Class VII swampwater.

Water quality data is attached for use in developing limits. Field data from station 3-RUN001.39 is included; this station is located on Ruin Branch approximately 0.91 mile upstream of the discharge. Hardness data was not collected at this station, however; therefore data from station 3-TBS001.08 is

Flow Frequency Determination  
VA0072729 – Montross-Westmoreland WWTP  
February 11, 2011  
Page 2

used. The station is located on The Big Swamp at the Route 623 bridge; The Big Swamp is also a tributary of Cat Point Creek and is located in the same watershed.

The receiving stream was considered a Tier 1 water by D.X Ren on April 12, 1995.

Although Ruin Branch is not impaired for the Recreation Use, the facility was addressed in the downstream Shellfish Bacteria TMDL for the Upper Rappahannock River, which was approved by the EPA on 8/10/2010 and by the SWCB on 12/13/2010. The facility received a fecal coliform wasteload allocation of 6.89E+07 MPN/day based on a design flow of 0.13 MGD and a fecal coliform concentration of 14 MPN/100mL.

In addition, the Chesapeake Bay TMDL was approved by the EPA on 12/29/2010. The TMDL addressed dissolved oxygen and SAV impairments within the Chesapeake Bay and its tidal tributaries. The Montross-Westmoreland WWTP received the following individual allocations:

- 1,584 lbs/year of Total Nitrogen
- 119 lbs/year of Total Phosphorus
- 11,877.684 lbs/year of Total Suspended Solids

If you have any questions concerning this analysis, please let me know.

## MEMORANDUM

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Piedmont Regional Office**  
**4949-A Cox Road Glen Allen, Virginia 23060**

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**SUBJECT:** Flow Frequency Determination/303(d) Status  
Montross - Westmoreland STP – VA0072729

**TO:** Denise Mosca

**FROM:** Jennifer V. Palmore, P.G. *JVP*

**DATE:** May 27, 2008

**COPIES:** File

The Montross-Westmoreland Wastewater Treatment Plant discharges to Ruin Branch near Montross, VA. Flow frequencies have been requested at this site for use in developing effluent limitations for the VPDES permit.

The flow frequency was determined by drainage area proportion between the discharge point and a former USGS gauge on Cat Point Creek (#01668500). This gauge was operated from 1943 to 1999. The flow frequencies are presented below.

**Cat Point Creek near Montross, VA (#01668500):**

Drainage area = 45.6 mi<sup>2</sup>

Statistical period = 1943-1999

1Q30 = 0.00 cfs	High Flow 1Q10 = 4.9 cfs
1Q10 = 0.00 cfs	High Flow 7Q10 = 6.8 cfs
7Q10 = 0.05 cfs	High Flow 30Q10 = 14 cfs
30Q10 = 0.58 cfs	HM = undefined
30Q5 = 1.3 cfs	

**Ruin Branch at discharge point:**

Drainage Area = 1.91 mi<sup>2</sup>

1Q30 = 0.00 cfs (0.00 MGD)	High Flow 1Q10 = 0.21 cfs (0.13 MGD)
1Q10 = 0.00 cfs (0.00 MGD)	High Flow 7Q10 = 0.28 cfs (0.18 MGD)
7Q10 = 0.00 cfs (0.00 MGD)	High Flow 30Q10 = 0.59 cfs (0.38 MGD)
30Q10 = 0.024 cfs (0.016 MGD)	HM = undefined
30Q5 = 0.054 cfs (0.035 MGD)	

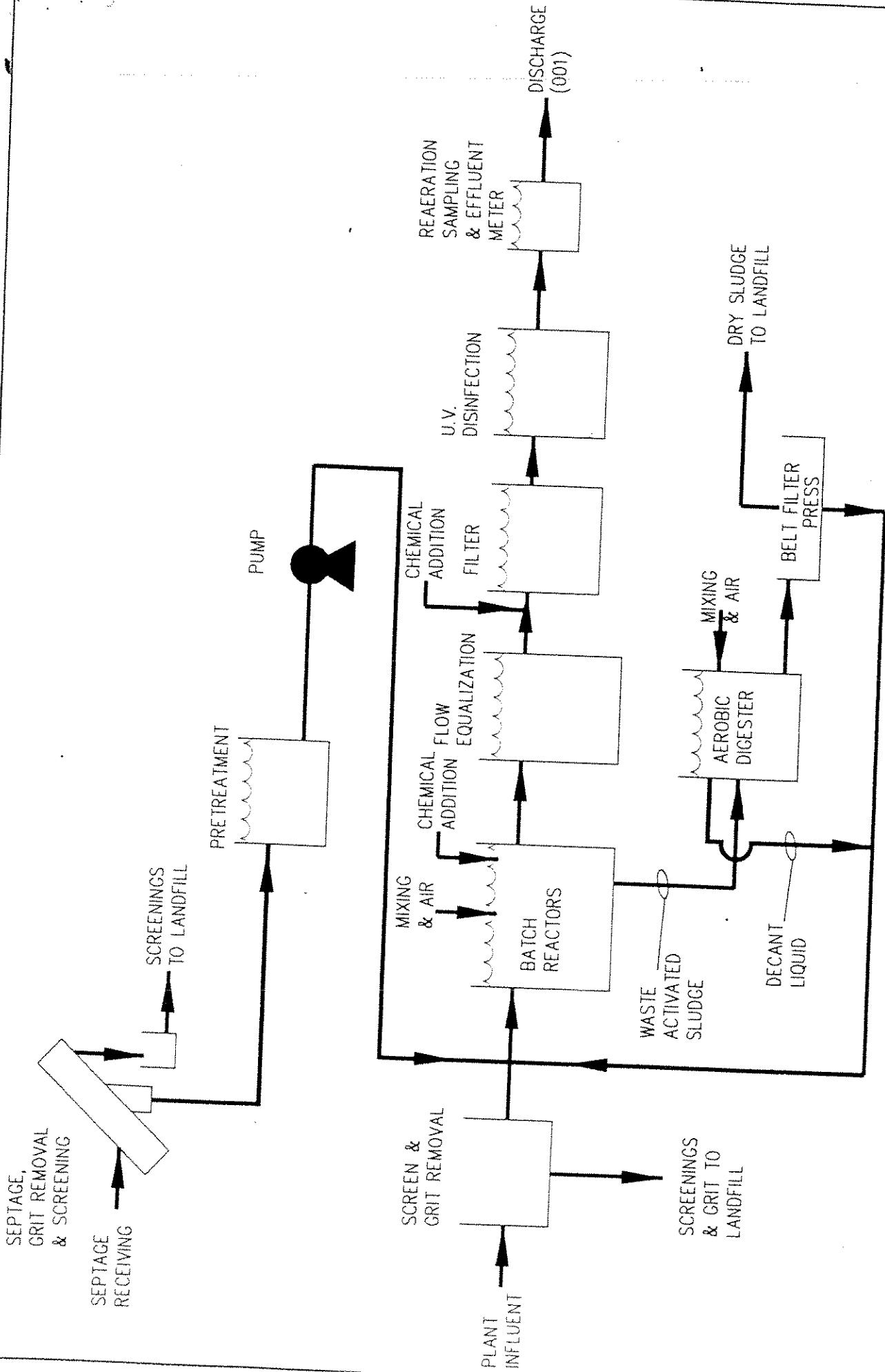
This analysis does not address any withdrawals, discharges, or springs lying between the gauge and the discharge point. The high flow months are December through May.

During the 2006 and draft 2008 305(b)/303(d) Integrated Report cycles, the tributaries of Cat Point Creek, including Ruin Branch, were assessed as fully supporting of the Wildlife Use, however they were assessed as impaired of the Aquatic Life Use due to a pH impairment in the watershed. The TMDL was originally due in 2016, however a Natural Conditions Assessment was performed during the 2006 cycle.

to determine if the source of the low pH. Based on the results of the study, the report recommended that Cat Point Creek and its tributaries from the headwaters to the head of tide be reclassified as Class VII swampwaters. Until the Water Quality Standards can be revised, the streams are assessed as Category 4C waters.

If you have any questions concerning this analysis, please let me know.

## **Attachment B: Plant Flow Diagram**



**Attachment C: Topographic Map and Aerial Images**

124 MILS  
1'07"  
20 MILS

UTM GRID AND 1968 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 10 FEET  
DOTTED LINES REPRESENT 5-FOOT CONTOURS  
DATUM IS MEAN SEA LEVEL  
SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER  
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
THE MEAN RANGE OF TIDE IS APPROXIMATELY 1.5 FEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092  
AND VIRGINIA DIVISION OF MINERAL RESOURCES, CHARLOTTESVILLE, VIRGINIA 22903  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



hard surface

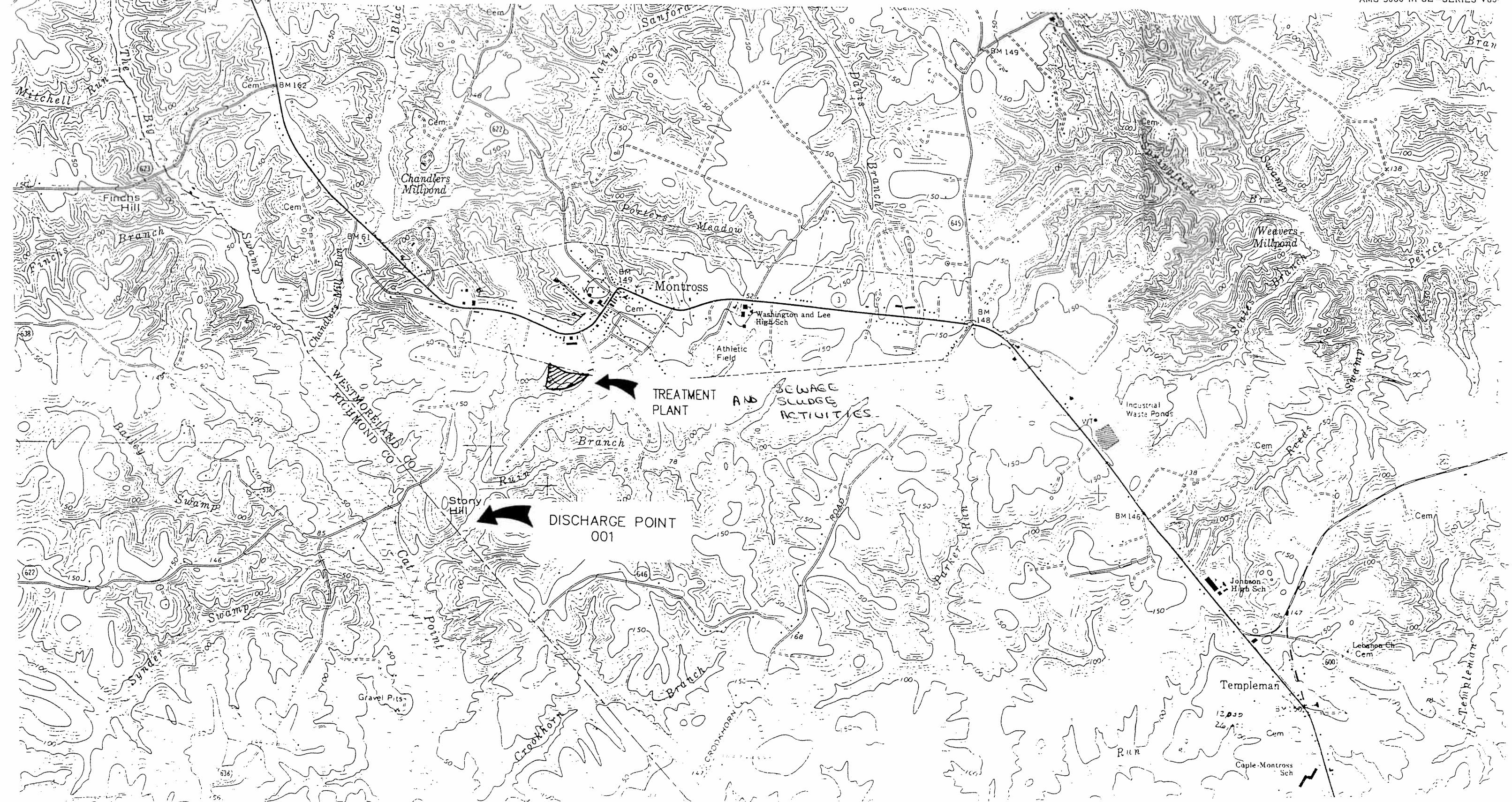
Interstate Route

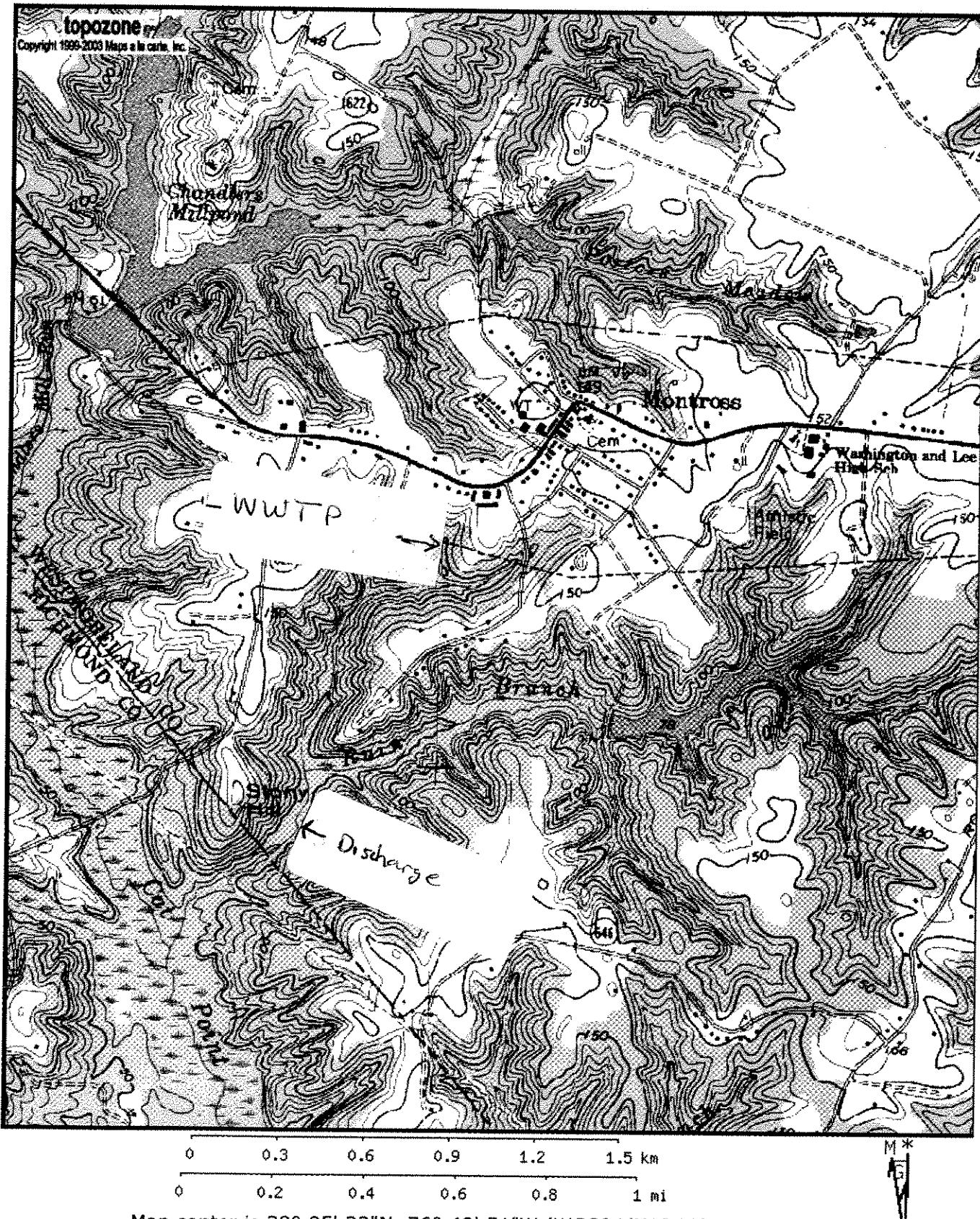
U. S. Route

State Route

MONTROSS, VA.  
N3800—W7645/7.5  
PHOTOINSPECTED 1981  
1968

AMS 5660 III SE-SERIES V83





Map center is  $38^{\circ} 05' 23''\text{N}$ ,  $76^{\circ} 49' 51''\text{W}$  (WGS84/NAD83)

**Montross** quadrangle

Projection is UTM Zone 18 NAD83 Datum

M=-10.712  
G=-1.13

## Aerial Images

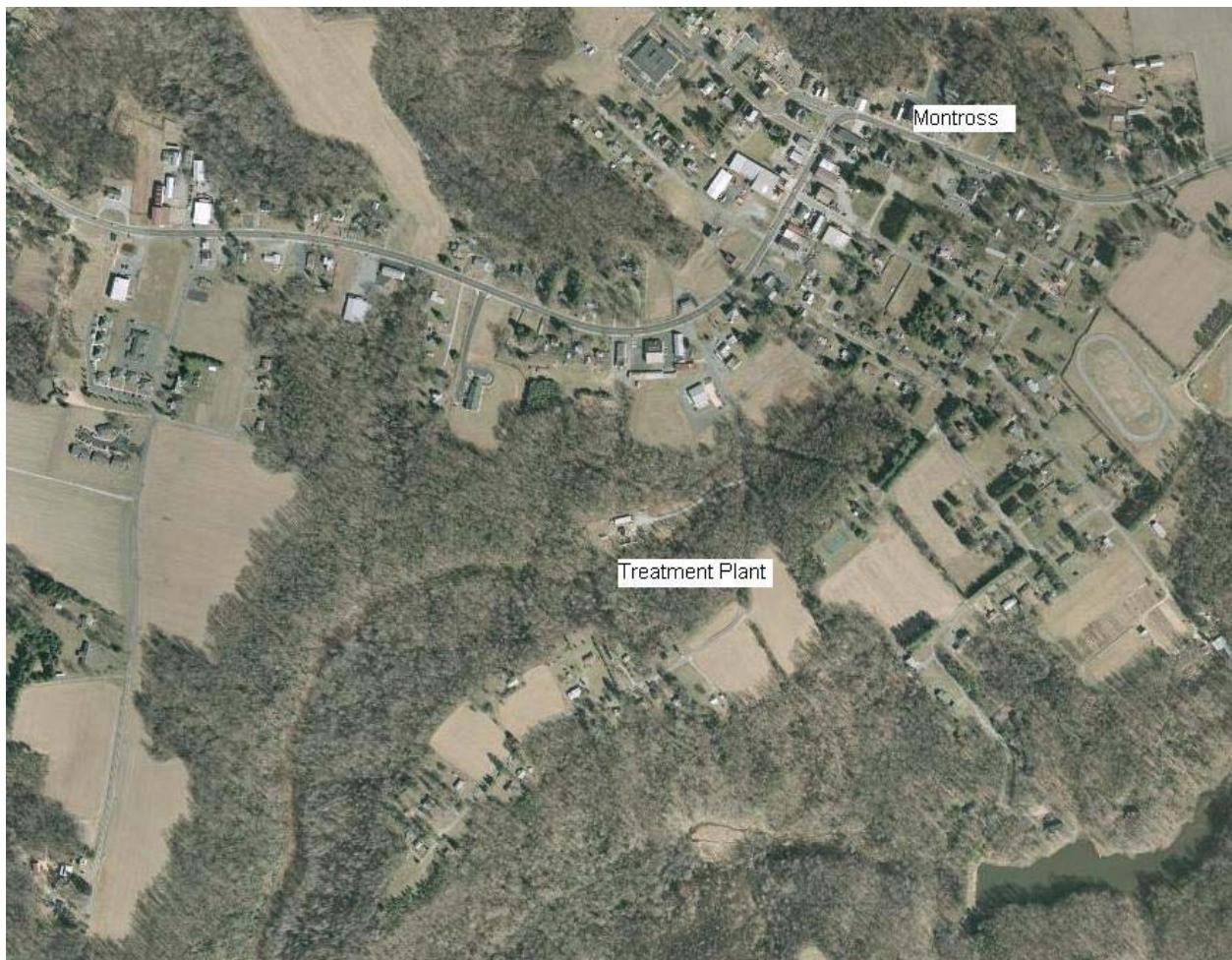


Figure 1. Aerial view of Montross and treatment plant location



Figure 2. Close-up aerial image of treatment plant.

## **Attachment D: Site Inspection**

# MEMORANDUM

## DEPARTMENT OF ENVIRONMENTAL QUALITY *Piedmont Regional Office*

4949-A Cox Rd Glen Allen, VA 23060

(804) 527-5020

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SUBJECT: Site Visit- VA0072729- Montross Westmoreland WWTP

TO: File

FROM: Janine Howard, PRO Permit Writer

DATE: 5 May 2011

On May 5, 2011 at 10:15am I met with Kevin Spruth, the operator of Montross - Westmoreland WWTP, at the facility. The WWTP is located at 160 Lyells Street in Montross, VA. Since the 2004 permit was issued, Westmoreland County assumed ownership of the facility, taking over from the now obsolete Montross-Westmoreland Sewer Authority.

Each component of the wastewater treatment plant was inspected, beginning with the sludge belt press, and then the headworks through the final effluent. The belt press was not operational at the time of the visit, but appeared to be in good working order (Figure 1). Mr. Spruth indicated that the belt press is operated twice per week, with about 9 tons of sludge produced per month (Figure 2). The sludge disposal method was verified during the site visit. Sludge is hauled to King & Queen Sanitary Landfill by Allied Waste.

Although the septage receiving area is still in existence (depicted on the site diagram, Attachment B) at the headworks of the plant, sepatge is no longer accepted and the area is not used. A spiral screen was installed in March of 2010 to replace the mechanical barscreens. Mr. Spruth indicated that the spiral screen was working well for the plant, and it was operational at the time of the visit (Figure 3).One mechanical screen remains at the plant and can be manually operated if needed (Figure 4). The aluminum sulfate feed, used for phosphorus control, was inspected and no chemical spills were apparent (Figure 5). Spare drums of the chemical were kept nearby to the feed area (Figure 6). Secondary containment and storage under roof is recommended to prevent potential spills and exposure to storm water. Mr. Spruth stated that the County was looking into options for secondary containment. The five dormant septage receiving tanks were inspected and contained rainwater at the bottom. Both Sequencing Batch Reactors (SBRs) were in use at the time of the inspection and were in good working order (Figures 7 and 8). The blower for each SBR was operational (Figure 9). The flow equalization (EQ) basin (Figure 10) is drained quarterly and leaf removal is necessary. Mr. Spruth expressed a desire to recycle some of the water from the EQ basin for use in the belt press, rather than utilizing potable municipal water, as is presently the case. A multi-disk fabric filter system replaced the sand filters in 2010 (Figure 11). Since installation the filters have not needed to be replaced. The UV disinfection system appeared to be in working order (Figure 12). Mr. Spruth stated that the bulbs for the UV disinfection system are replaced every 6 months and cleaned regularly. The facility's Discharge Monitoring Reports show that the facility is achieving adequate disinfection with many of the *E. coli* results being less than 2 N/100mL. The flow meter, cascade aeration and final effluent area were inspected. The flow meter experienced erratic readings during the previous winter season, and was subsequently insulated from the cold. Mr. Spruth said that flow meter had been working properly since being insulated (Figure 13). The reaeration steps (Figure 14) were visible due to no flow at the time of inspection. According to the operator, Inflow and Infiltration is not an issue for this facility. The digester is kept at about 3.5 feet in depth and two blowers are used (Figure 15).The facility grounds appeared well kept and the laboratory room was organized and clean.



Figure 1. Sludge Belt press

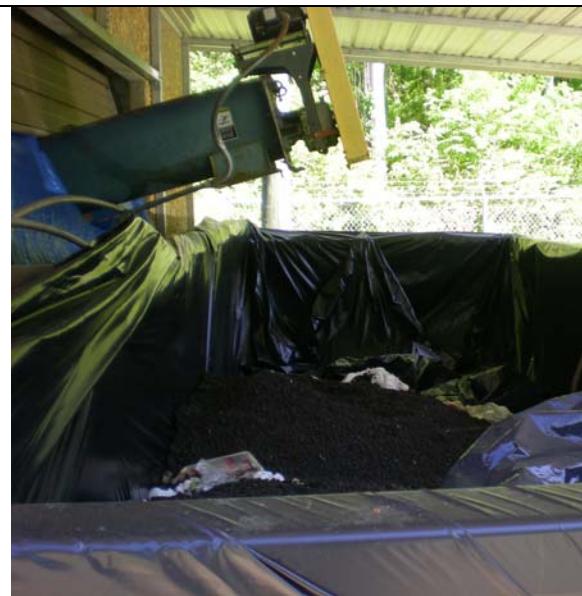


Figure 2. Dewatered sludge for landfill



Figure 3. Spiral Screen

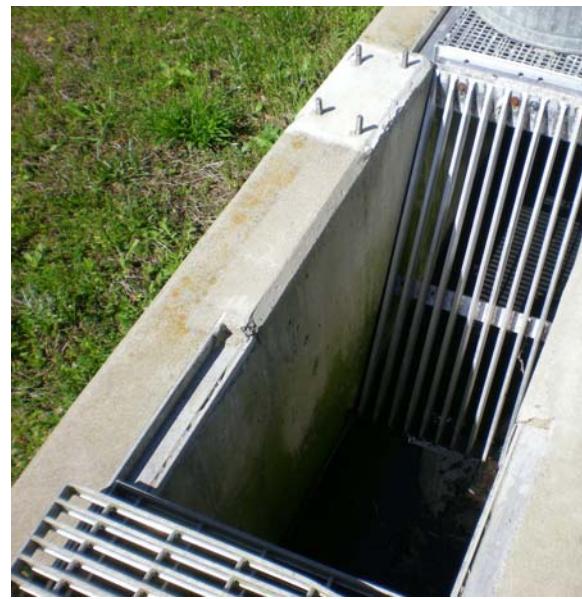


Figure 4. Mechanical Screen (not in use at the time of the visit)



Figure 5. Aluminum sulfate feed



Figure 6. Aluminum sulfate storage



Figure 7. SBR #1

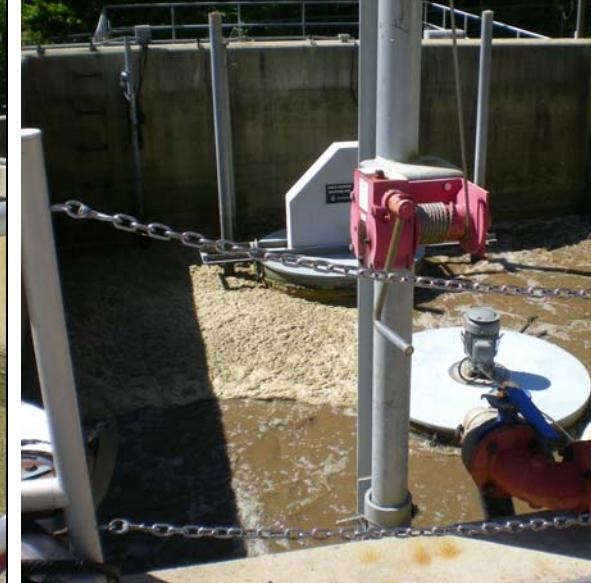


Figure 8. SBR #2



Figure 9. SBR #1 blower



Figure 10. Equalization basin

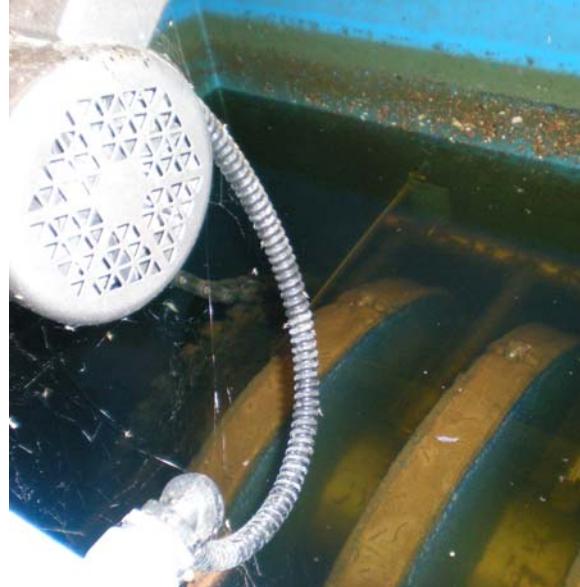


Figure 11. Multi-Disk filter



Figure 12. UV disinfection system



Figure 13. Flow Meter



Figure 14. Step aeration



Figure 15. Digester

## VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Wastewater Facility Inspection Report

Revised 08/2001

<b>Facility Name:</b>	<u>Montross-Westmoreland WWTP</u>			<b>Facility No.:</b>	<u>VA0072729</u>	
<b>City/County:</b>	<u>Westmoreland</u>			<b>Inspection Agency:</b>	<u>DEQ</u>	
<b>Inspection Date:</b>	<u>January 7, 2009 (0945-1400 hrs)</u>			<b>Date Form Completed:</b>	<u>January 13, 2009</u>	
<b>Inspector:</b>	<u>Mike Dare</u>			<b>Time Spent:</b>	<u>16 hrs. w/ travel &amp; report</u>	
<b>Reviewed By:</b>				<b>Unannounced Insp.?</b>	<u>YES</u>	
				<b>FY-Scheduled Insp.?</b>	<u>YES</u>	
<b>Present at Inspection:</b>	<u>Kevin Spruth, Don Bryant (Coles Point WWTP Operator in Cross Training program)</u>					
<b>TYPE OF FACILITY:</b>						
<u>Domestic</u>			<u>Industrial</u>			
<input type="checkbox"/> Federal	<input type="checkbox"/> Major		<input type="checkbox"/> Major	<input type="checkbox"/> Primary		
<input checked="" type="checkbox"/> Non-Federal	<input checked="" type="checkbox"/> Minor		<input type="checkbox"/> Minor	<input type="checkbox"/> Secondary		
Population Served:	<u>*approx.: 400</u>					
Number of Connections:	<u>*337 (111 of which are commercial) *from previous inspection</u>					
<b>TYPE OF INSPECTION:</b>						
<input checked="" type="checkbox"/> Routine	<u>Date of last inspection: June 12, 2007</u>					
<input type="checkbox"/> Compliance	<u>Agency: DEQ/PRO</u>					
<input type="checkbox"/> Reinspection						
<b>INFLUENT and EFFLUENT MONITORING:</b>			<u>See Discharge Monitoring Reports (DMR) in file</u>			
Last month average:	BOD:	<u>mg/L</u>	TSS:	<u>mg/L</u>	Flow:	<u>MGD</u>
<b>(Influent) Date:</b>						
Other: <u>mg/L</u>						
Last month:	CBOD:	<u>mg/L</u>	TSS:	<u>mg/L</u>	Flow:	<u>MGD</u>
<b>(Effluent) Date:</b>						
Other:						
Quarter average:	CBOD:	<u>mg/L</u>	TSS:	<u>mg/L</u>	Flow:	<u>MGD</u>
<b>(Effluent) Date:</b>						
Other:						
<b>CHANGES AND/OR CONSTRUCTION</b>						
DATA VERIFIED IN PREFACE	<input type="checkbox"/> Updated	<input checked="" type="checkbox"/> No changes				
Has there been any new construction?	<input type="checkbox"/> Yes*	<input checked="" type="checkbox"/> No				
If yes, were plans and specifications approved?	<input type="checkbox"/> Yes	<input type="checkbox"/> No*	<input checked="" type="checkbox"/> N/A			
DEQ approval date:	<u>N/A</u>					

**(A) PLANT OPERATION AND MAINTENANCE**

1. Class and number of licensed operators: Class I - 1, Class III – 1
2. Hours per day plant is staffed: 8 hours/day, 7 days/week
3. Describe adequacy of staffing: Cross training program with Coles Point WWTP is in progress       Good     Average     Poor\*
4. Does the plant have an established program for training personnel?       Yes     No
5. Describe the adequacy of the training program:       Good     Average     Poor\*
6. Are preventive maintenance tasks scheduled?       Yes     No\*
7. Describe the adequacy of maintenance:       Good     Average     Poor\*
8. Does the plant experience any organic/hydraulic overloading?       Yes\*     No
- If yes, identify cause and impact on plant: N/A
9. Any bypassing since last inspection?       Yes\*     No
10. Is the on-site electric generator operational?       Yes     No\*     N/A
11. Is the STP alarm system operational?       Yes     No \*     N/A
12. How often is the standby generator exercised?  
Power Transfer Switch?       Weekly     Monthly     Other:  
Alarm System?       Weekly     Monthly     Other:
13. When were the cross connection control devices last tested on the potable water service? March 1, 2008
14. Is sludge disposed in accordance with the approved sludge disposal plan?       Yes     No\*     N/A
15. Is septage received by the facility?       Yes  No  
Is septage loading controlled?       Yes     No \*     N/A  
Are records maintained?       Yes     No\*     N/A
16. Overall appearance of facility:       Good     Average     Poor\*

**Comments:** #3 – There is a cross-training program in progress with Operators at Coles Point WWTP. #4 - Training includes OJT and misc. classes. #10 - There are also two portable generators on site (for pump stations). #11 – Plant power outage alarm tied to auto-dialer which calls Sheriff's department who in-turn calls Operator. Recommend refurbishing currently inoperable alarm system for various in-plant alarm conditions. #14 – Disposal is at the King and Queen County Landfill by Allied. #15 – Septage is no longer received at the plant due to causing operational issues. The thick solids noted in the five septage receiving tanks at time of the 6/07 inspection have been removed.

**(B) PLANT RECORDS**

1. Which of the following records does the plant maintain?
- |   |   |                              |   |
|---|---|------------------------------|---|
| Operational Logs for each unit process                        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Instrument maintenance and calibration                        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Mechanical equipment maintenance                              | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Industrial waste contribution ( <b>Municipal Facilities</b> ) | <input type="checkbox"/> Yes            | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
2. What does the operational log contain?
- |                      |   |                              |                              |
|----------------------|---|------------------------------|------------------------------|
| Visual Observations  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Flow Measurement     | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Laboratory Results   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Process Adjustments  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Control Calculations | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Other:               |   |                              |                              |
3. What do the mechanical equipment records contain?
- |                             |   |                              |                              |
|-----------------------------|---|------------------------------|------------------------------|
| As built plans and specs?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Spare parts inventory?      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Manufacturers instructions? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Equipment/parts suppliers?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Lubrication schedules?      | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No  | <input type="checkbox"/> N/A |
| Other:                      |   |                              |                              |
| Comments:                   | <u>None</u>                             |                              |                              |
4. What do the industrial waste contribution records contain?
- |                                |                          |                              |   |
|--------------------------------|--------------------------|------------------------------|---|
| Waste characteristics?         | <input type="checkbox"/> | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Locations and discharge types? | <input type="checkbox"/> | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Impact on plant?               | <input type="checkbox"/> | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Other:                         | <u>N/A</u>               |                              |   |
| Comments:                      | <u>None</u>              |                              |   |
5. Are the following records maintained at the plant?
- |                                |   |                              |   |
|--------------------------------|---|------------------------------|---|
| Equipment maintenance records  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Operational Log                | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Industrial contributor records | <input type="checkbox"/>                | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Instrumentation records        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
| Sampling and testing records   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A            |
6. Are records maintained at a different location?  
Where are the records maintained?
- |  |                                   |  |  |
|--|-----------------------------------|--|--|
|  | <input type="checkbox"/> Yes      | <input checked="" type="checkbox"/> No |  |
|  | <u>All are available on site.</u> |  |  |
7. Were the records reviewed during the inspection?
- |  |   |                             |  |
|--|---|-----------------------------|--|
|  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |  |
|--|---|-----------------------------|--|
8. Are the records adequate and the O & M Manual current?  
O&M Manual date written: Feb. 2000 (revised 04/25/2000)  
Date DEQ approved O&M: June 16, 2000
- |  |   |                              |                              |
|--|---|------------------------------|------------------------------|
|  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
|--|---|------------------------------|------------------------------|
9. Are the records maintained for required 3-year period?
- |  |   |                              |  |
|--|---|------------------------------|--|
|  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |  |
|--|---|------------------------------|--|

Comments: #1 - A single operational log is kept for the entire plant. Log includes notes for various treatment units, observations and equipment adjustments. #2 – Flow measurements, lab records and control calculations are maintained separate from operational log.

**(C) SAMPLING**

- |  |   |                              |                              |
|--|---|------------------------------|------------------------------|
| 1. Are sampling locations capable of providing representative samples? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 2. Do sample types correspond to those required by the permit?         | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 3. Do sampling frequencies correspond to those required by the permit? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 4. Are composite samples collected in proportion to flow?              | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 5. Are composite samples refrigerated during collection?               | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 6. Does plant maintain required records of sampling?                   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 7. Does plant run operational control tests?                           | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |

**Comments:** #7 - Includes MLSS, settleability and daily microbe exam. Effluent samples manually collected and composited proportionally (0700-1500 hrs on Monday, Tuesday and Wednesday).

**(D) TESTING**

- |                              |   |
|------------------------------|---|
| 1. Who performs the testing? | <input checked="" type="checkbox"/> Plant/ Lab<br><input type="checkbox"/> Central Lab<br><input checked="" type="checkbox"/> Commercial Lab - Name: <u>Primary</u> |
|------------------------------|---|

*If plant performs any testing, complete 2-4.*

- |   |   |
|---|---|
| 2. What method is used for chlorine analysis?                   | N/A (Ultraviolet disinfection)  |
| 3. Is sufficient equipment available to perform required tests? | <input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A |
| 4. Does testing equipment appear to be clean and/or operable?   | <input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A |

**Comments:** Please see enclosed DEQ Laboratory Inspection Report.

**(E) FOR INDUSTRIAL FACILITIES W/ TECHNOLOGY BASED LIMITS N/A**

- |   |   |
|---|---|
| 1. Is the production process as described in the permit application? (If no, describe changes in comments)              | <input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A |
| 2. Do products and production rates correspond to the permit application? (If no, list differences in comments section) | <input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A |
| 3. Has the State been notified of the changes and their impact on plant effluent?                                       | <input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A |

**Comments:** None

**FOLLOW UP TO COMPLIANCE RECOMMENDATIONS FROM THE June 12, 2007 DEQ INSPECTION:**

1. All five septage receiving tanks are full. Please discuss any problems as well as when tank operation will be resumed.  
**The thick solids noted in the five septage receiving tanks at time of the 6/07 inspection have been removed.**
2. Both mechanical barscreens reportedly not operational. Please discuss any problems as well as when the barscreen operation will be restored.  
**The County has proposed replacing the screens with a spiral screw screener.**
3. The gravity sand filters are currently out of service. Please discuss why the filters were taken out of service and if the units are operational. (The previous inspection reported that sand had entered the SBRs due to a malfunction of a sand filter.)  
**The sand filters were placed permanently out of service due to significant maintenance problems. The County has proposed replacing the filters with a disk filter system.**
4. The sludge press was not operating at time of inspection due to a sludge pump packing gland problem. The digester was full at time of inspection. There was no settling taking place in the digester even though the air had reportedly been off since 1400 hrs. the previous day. Please discuss the current status of sludge press and digester operations.  
**The solids inventory in the plant has been reduced significantly since the previous inspection. The digester is reportedly settling well and the sludge press is being operated 4 days a week.**
5. Cross connection control device past due for testing. (Tag on unit indicates last test performed February 26, 2006.)  
**Cross connection control device last tested March 1, 2008.**
6. Only one pump is currently installed in pump station #4 (located along Rt. 3 near Rt. 202). A second pump reportedly was removed as a result of sand entering the station from a nearby private collection system. Sewage Collection and Treatment Regulations require two pumping units be provided. Please discuss efforts being made toward installing a second pump at this station.  
**It was reported that the missing backup pumps at various stations will be replaced.**
7. Pump stations #2 (downstream of PS #4 along Rt. 3) and #4 are below grade type stations with an access hatch that opens directly to the wetwell. Both access hatches could easily be opened and entered by vandals or unsuspecting public.  
**Condition unchanged.**

**FOLLOW UP TO GENERAL RECOMMENDATIONS FROM THE June 12, 2007 DEQ INSPECTION:**

1. Spare ballasts for the UV disinfection system could not be located during the inspection. An appropriate number of spare ballasts should be maintained. This number may be referenced in the O&M manual.  
**One spare ballast was on hand at the time of inspection.**
2. If a checklist for routine UV system overhauls is not included in the O&M manual, one similar to the list below should be developed and maintained:  
**System is drained and cleaned every weekend. All bulbs were replaced in August of 2008. Electronics (including UV sensor) that have failed will reportedly be repaired at the time of a future in-plant project. Fecal results monitored closely and used as an indication of bulb effectiveness.**

## INSPECTION REPORT SUMMARY

### **Compliance Recommendations/Request for Corrective Action:**

1. Pump stations #2 (downstream of PS #4 along Rt. 3) and #4 are below grade type stations with an access hatch that opens directly to the wetwell. Both access hatches could be easily opened and entered by vandals or unsuspecting public. Please secure these and any other stations within the collection system of similar status.

### **General Recommendations/Observations:**

1. Please compare UV system spare parts on hand with Infilco Degremont's suggested spare parts inventory (see attached "INFILCare Insider"). Order additional spare parts if deemed necessary.
2. The installation of appropriate fall protection around test pits noted in the vicinity of the out of service sand filters is recommended.
3. Periodic inspection of the outfall right-of-way and outfall structure for proper operation is recommended.
4. Recommend refurbishing the currently inoperable alarm system for various in-plant alarm conditions. (Also recommend tying alarms into an auto-dialer or remote telemetry type system - if not already the case.)

Areas of emphasis (Compliance Assessment) - check all that apply:

[x] Yes	[ ] No	Operational Units
[x] Yes	[ ] No	Evaluation of O & M Manual
[ ] Yes	[x] No	Maintenance Records
[ ] Yes	[ ] No	[x] N/A Pathogen Reduction & Vector Attraction Reduction
[x] Yes	[ ] No	[ ] N/A Sludge Disposal Plan
[ ] Yes	[ ] No	[x] N/A Groundwater Monitoring Plan
[ ] Yes	[ ] No	[x] N/A Storm Water Pollution Prevention Plan
[x] Yes	[ ] No	[ ] N/A Permit Special Conditions
[ ] Yes	[x] No	[ ] N/A Permit Water Quality Chemical Monitoring
[x] Yes	[ ] No	[ ] N/A Laboratory Records (see Lab Report)

### **Comments:**

Westmoreland County took over ownership of the facility from the Montross-Westmoreland Sewer Authority on June 5, 2008. Mr. Kevin Spruth took over operations of the plant in August of 2008. High TKN levels have been on the decline since that time. (Average TKN for December 2008 was 3.15 mg/L; Permit limit is 3.0 mg/L.) Mr. Spruth has been working with an Aqua Aerobics representative on enhancing the efficiency of the plant. Mr. Norm Risavi, County Administrator, will be contacting DEQ's Office of Water Permit Programs for further operational assistance. This as part of an upcoming Letter of Agreement between DEQ and Westmoreland County. The County has proposed replacing the out of service headworks screener and sand filters and refurbishing the de-gritting unit. A contractor is in the process of rehabilitating many of the pump stations. This work includes the repair of inoperable floats and alarms and deteriorated wiring. It is anticipated that the missing backup pumps at various pump stations will also be replaced.

UNIT PROCESS: Sewage Pumping

The following satellite pump stations are maintained (10 within Montross & 5 in Westmoreland County):

Montross Pump Station:

- #1 Chandler Mill Pond – Two 6.2 HP grinder pumps (ABS Piranha Model M50/2W), 26 gpm @ 135' total head, with seal failure warning light.
- #2 Goat Pasture – Two 2.1 HP grinder pumps (ABS Piranha Model S16/2W), 26.5 gpm at 67' total head, with seal failure warning light.
- #3 Carver Street – Two 2.1 HP grinder pumps (ABS Piranha Model S16/2W), 31 gpm at 62' total head, with seal failure warning light.
- #4 Harris Drive – Two 1.3 HP grinder pumps (ABS Piranha Model S10/4W), 16.5 gpm at 30' total head, with seal failure warning light.
- #5 Alma Route 3 – Two 1.3HP grinder pumps (ABS Piranha Model S10/4W), 19 gpm at 28.5' total head, with seal failure warning light.
- #6 King's Highway – Two 1.3 HP grinder pumps (ABS Piranha Model S10/4W), 19 gpm at 28.5' total head, with seal failure warning light.
- #7 High School – Two 1.3 HP grinder pumps (ABS Piranha Model S10/4W), 20 gpm at 28' total head, with seal failure warning light.
- #8 East End – Two 3.5 HP grinder pumps (ABS Piranha Model S26/2W), 30 gpm at 80' total head, with seal failure warning light.
- #9 Travis Pond – Two 3.5 HP grinder pumps (ABS Piranha Model S26/2W), 18 gpm at 111' total head, with seal failure warning light.
- #10 Edwards – Two 1.3 HP grinder pumps (ABS Piranha Model S10/4W), 31.6 gpm at 13.7' total head, with seal failure warning light.

Westmoreland County:

- #1 Pump Station #1 – Design peak = 0.165 MGD; Max. peak = 0.185 MGD; two pumps (one is standby) 100-123 gpm at 114' total head; 4" force main.
- #2 Pump Station #2 – Design peak = 0.11 MGD; Max. peak = 0.18 MGD; two pumps (one is standby) 69 gpm at 83' total head; 3" force main.
- #3 Pump Station #3 – Design peak = 0.007 MGD; Max. peak = 0.086 MGD; two pumps (one is standby) 23 gpm at 58' total head; 2" force main.
- #4 Pump Station #4 – Design peak = 0.108 MGD; Max. peak = 0.105 MGD; two pumps (one is standby) 67.5 gpm at 64' total head; 3" force main.
- #5 Pump Station #5 – Design peak = 0.00057 MGD; two pumps (one is standby) 38 gpm at 74' total head; 2.5" force main.

Comments:

The "Goat Pasture" and "Harris Drive" pump stations were visited during this inspection. No evidence of a recent overflow was noted at either station. A contractor is in the process of rehabilitating many of the pump stations. This work will include the repair of inoperable floats and alarms and deteriorated wiring. It is anticipated that the missing backup pumps at various pump stations will also be replaced.

A "drive-by" inspection was also performed by this writer of County pump stations #4 (located along Rt. 3 near Rt. 202) and #2 (downstream of PS #4 along Rt. 3). No evidence of a recent overflow was noted at either station. Both of these stations are below grade type stations with an access hatch opening directly to the wetwell. Both access hatches could be easily opened and entered by vandals or unsuspecting public.

UNIT PROCESS: Screening/Comminution

1. Number of units: Manual: 1 Mechanical: 2  
 Number of units in operation: Manual: 1 Mechanical: 0
2. Bypass channel provided? [x] Yes [ ] No  
 Bypass channel in use? [x] Yes [ ] No [ ] N/A
3. Area adequately ventilated? [x] Yes [ ] No\*
4. Alarm system for equipment failure or overloads? [ ] Yes [ ] No [ ] N/A Not ascertained  
 If present, is the alarm system operational? [ ] Yes [ ] No \* [ ] N/A
5. Proper flow-distribution between units? [ ] Yes [ ] No \* [x] N/A
6. How often are units checked and cleaned? 3 times a day
7. Cycle of operation: manual
8. Volume of screenings removed: ~ 1 cubic foot/day
9. General condition: [ ] Good [x] Fair [ ] Poor\*

**Comments:** Neither mechanical screen is operational. The County has proposed replacing the screens with a spiral screw screener. Screenings currently being removed manually. Septage is no longer received at the plant due to causing operational issues. Thick solids noted in the five septage receiving tanks at time of the 6/07 inspection have been removed.

**UNIT PROCESS: Grit Removal**

1. Number of units: 1  
Number of units in operation: 0
2. Unit adequately ventilated?  Yes  No \*
3. Operation of grit collection equipment:  Manual  Time clock  Continuous duty
4. Proper flow-distribution between units?  Yes  No \*  N/A
5. Daily volume of grit removed: No grit currently being removed
6. All equipment operable?  Yes  No \*
7. General condition:  Good  Fair  Poor\*

**Comments:** The chain and flight mechanism portion of this system is in need of repair. The County has proposed refurbishing the unit. Alum is added (from 55-gallon drum) for Phosphorus removal.

UNIT PROCESS: Sequencing Batch Reactors

1. Number of reactors: 2 (both in use)  
Volume of batch discharge: Varies between 1,500 and 5,000 Gallons
2. Batch cycle frequency: about 4.5 cycles per day
3. Mode of operation?  BOD removal  Ammonia (including BOD) removal
4. Method of cycle control:  Microprocessor (PLC)  Manual  
 Timer  Float
5. Type of aeration:  Diffusers  Floating mechanical  other
6. Cycle Times:
  - a. Fill – anoxic + mix: 50 minutes
  - b. Fill - aerated 110 minutes
  - c. React time: 50 minutes
  - d. Settle time: 65 minutes
  - e. Draw down time: 45 minutes
  - f. Idle time: \_\_\_\_\_ minutes
7. Type of discharge mechanism:  Fixed Pipe  Pump  Floating Weir  Other
8. Wasting frequency: once per cycle; approx. 1,200 gal./day/SBR
9. Method of Wasting:  Pump  Gravity  Other
10. Condition of activated sludge:
  - a. Foam present?  Yes  No
  - b. Color of foam: Light brown
  - c. Scum present?  Yes  No
  - d. Odor: none
  - e. Color: medium brown
11. Mixed liquor characteristics:
  - a. pH: 2,200 mg/L
  - b. MLSS: Between 400 and 500 mL/L
  - c. Settleability:
12. Effluent Characteristics: Clear at UV system
13. General condition:  Good  Fair  Poor

Comments: Both SBR's were in use. Two blowers were on line.

UNIT PROCESS: (Post) Flow Equalization

1. Type of unit:                            In-line    Side-line    Spill Pond  
 Number of cells:                           1  
 Number of cells in operation:           1
2. What unit process does it precede?                           ultraviolet disinfection
3. Is volume adequate?                    Yes    No
4. Type of mixing:                            None    Diffused air    Fixed Mechanical  
 Floating mechanical
5. Condition of mixing equipment:                           N/A    Good    Average    Poor\*
6. How drawn off?  
 a. Pumped from:                            Surface    Sub-surface    Adjustable    N/A  
 b. Weir:                                    Surface    Sub-surface    N/A
7. What is the condition of the containment structure?            Good    Fair    Poor\*
8. Are the facilities to flush solids and grease from basin walls adequate?                    Yes    No\*    N/A
9. Are there facilities for withdrawing floating material and foam?                    Yes    No
10. How are solids removed?  
      Drain down                            Drag line  
      Other:  
     Is it adequate?                            Yes    No\*
11. Is the emergency overflow in good condition?                    Yes    No\*    N/A
12. Are the depth gauges in good condition?                    Yes    No    N/A
13. General condition:                    Good    Fair    Poor\*

**Comments:** The EQ basin is provided to accept decant from the SBR and store it until pumped via two submersible pumps to the UV disinfection unit. (The gravity sand filters are permanently out of service.) #7 & 13 Basin not observed during this inspection.

UNIT PROCESS: Aerobic Digestion

1. Number of units: 1  
 Number of units in operation: 1
2. Type of sludge treated:  Primary  WAS  Other:
3. Frequency of sludge application to digesters: every cycle
4. Supernatant return rate: once a week
5. pH adjustment provided?  Yes  No  
 Utilized:  Yes  No  N/A
6. Tank contents well-mixed and relatively free of odors?  Yes  No\*
7. If diffused aeration is used, do diffusers require frequent cleaning?  Yes  No  N/A once a year
8. Location of supernatant return:  Head  Primary  Other
9. Process control testing:  
 a. percent volatile solids:  Yes \_\_\_\_\_ %  No  
 b. pH:  Yes ~7.5 SU  No  
 c. settleability:  Yes ~800 ml/L  No  
 d. MLSS:  Yes ~7,000 mg/L  No
10. Foaming problem present?  Yes \*  No
11. Signs of short-circuiting or overloads?:  Yes \*  No
12. General condition:  Good  Fair\*  Poor

**Comments:** The air was on to the digester at the time of inspection. It was reported that the solids settle well when the air is turned off. The solids inventory is down considerably since the 6/07 inspection.

**UNIT PROCESS: Pressure Filtration (Sludge)****(Belt Press)**

1. Number of units: 1  
Number In operation: 0
2. Percent solids in influent sludge: (not ascertained) %
3. Percent solids in discharge cake: Not checked
4. Filter run time: 4 days/week for 3 hrs/day
5. Amount cake produced: ~ 7 tons/month
6. Conditioning chemicals used:  Yes  No  
Type and Dose: Polymer dosage not ascertained
7. Sludge pumping:  Manual  Automatic
8. Recirculating system included on acid wash:  Yes  No  N/A
9. Signs of overloads?  Yes \*  No
10. General condition:  Good  Fair  Poor\*

**Comments:** Disposal is at the King and Queen landfill by Allied.

## **UNIT PROCESS: Filtration (Tertiary)**

- |  |   |  |   |
|--|---|--|---|
| 1. Type of filters:                        | <input checked="" type="checkbox"/> Gravity | <input type="checkbox"/> Pressure  | <input type="checkbox"/> Intermittent   |
| 2. Number of units:                        | <u>2</u>                                    |  |   |
| Number in operation:                       | <u>0</u>                                    |  |   |
| 3. Operation of system:                    | <input type="checkbox"/> Automatic          | <input type="checkbox"/> Semi-automatic  |   |
|  | <input type="checkbox"/> Manual             | <input checked="" type="checkbox"/> Other (specify): <u>Permanently out of service</u> |   |
| 4. Proper flow-distribution between units? | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| 5. Evidence of following problems:         |   |  |   |
| a. Uneven flow distribution?               | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| b. Filter clogging (ponding)?              | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| c. Nozzles clogging?                       | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| d. Icing?                                  | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| e. Filter flies?                           | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| f. Vegetation on filter?                   | <input type="checkbox"/> Yes*               | <input type="checkbox"/> No  | <input checked="" type="checkbox"/> N/A |
| 6. Filter aid system provided?             | <input type="checkbox"/> Yes                | <input type="checkbox"/> No  |   |
| Properly operating?                        | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| Chemical used:                             |   |  |   |
| 7. Automatic valves properly operating?    | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| 8. Valves sequencing correctly?            | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| 9. Backwash system operating properly?     | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| 10. Filter building adequately ventilated? | <input type="checkbox"/> Yes                | <input type="checkbox"/> No*   | <input checked="" type="checkbox"/> N/A |
| 11. Effluent characteristics:              | <u>Permanently out of service</u>           |  |   |
| 12. General condition:                     | <input type="checkbox"/> Good               | <input type="checkbox"/> Fair  | <input type="checkbox"/> Poor*          |

**Comments:** The sand filters have never functioned properly and have been placed permanently out of service. The County has proposed replacing the filters with a disk filter system.

**UNIT PROCESS: Ultraviolet (UV) Disinfection**

1. Number of UV lamps/assemblies:	<u>2 units</u>
Number in operation:	<u>2</u>
2. Type of UV system and design dosage:	<u>Infilco Degremont, Inc. - horizontal</u>
3. Proper flow distribution between units?	[ ] Yes    [ ] No*    [x] N/A
4. Method of UV intensity monitoring?	<u>Fecal results</u>
5. Adequate ventilation of ballast control boxes?	[x] Yes    [ ] No*    [ ] N/A
6. Indication of on/off status of all lamps provided?	[x] Yes    [ ] No*
7. Lamps assemblies easily removed for maintenance?	[x] Yes    [ ] No*
8. Records of lamp operating hours & replacement dates provided: <u>Replacement date indicated in plant log</u>	[x] Yes    [ ] No*
9. Routine cleaning system provide Operated properly? Frequency of routine cleaning:	[x] Yes    [ ] No* [x] Yes    [ ] No* <u>once per week</u>
10. Lamp energy control system operating properly?	[x] Yes    [ ] No*
11. Date of last system overhaul: a. UV unit completely drained b. all surfaces cleaned c. UV transmissibility checked d. output of selected lamps checked e. output of tested lamps f. total operating hours, oldest lamp/assembly <u>Not monitored</u> g. number of spare lamps and ballasts available:	January 3, 2009 [x] Yes    [ ] No* [x] Yes    [ ] No* [ ] Yes    [x] No* [ ] Yes    [x] No*  <u>      </u> hrs. lamps <u>8</u> sleeves: <u>6</u> ballasts: <u>1</u>
12. UV protective eyeglasses provided:	[x] Yes    [ ] No*
13. General condition:	[x] Good    [ ] Fair    [ ] Poor*

**Comments:** #11c&d The UV sensor and LCD bar graph, currently not operational, are reportedly scheduled to be repaired as part of a future in-plant project. #11g Please see Infilco Degremont's suggested spare parts inventory (attached).

**UNIT PROCESS: Flow Measurement**

Influent     Intermediate     Effluent

1. Type measuring device: 3" Parshall flume w/Milltronics Hydroranger ultrasonic level/flow transmitter to circular chart recorder
2. Present reading: 120 gpm
3. Bypass channel?  
Metered?       Yes     No  
 Yes     No\*     N/A
4. Return flows discharged upstream from meter?  
If Yes, identify: N/A
5. Device operating properly?       Yes     No\*
6. Date of last calibration: May 21, 2008 (EI Tech Services)
7. Evidence of following problems:
  - a. Obstructions?       Yes\*     No
  - b. Grease?       Yes\*     No
8. General condition:       Good     Fair     Poor\*

**Comments:** None

**UNIT PROCESS: Post Aeration**

1. Number of units: 1- Step cascade  
 Number of units in operation: 1- Step cascade
2. Proper flow distribution between units?  Yes  No\*  N/A
3. Evidence of following problems:
- a. Dead spots?  Yes\*  No
  - b. Excessive foam?  Yes\*  No
  - c. Poor aeration?  Yes\*  No
  - d. Mechanical equipment failure?  Yes\*  No  N/A
4. How is the aerator controlled?  Time clock  Manual  Continuous  
 Other \_\_\_\_\_  N/A
5. What is the current operating schedule? continuous
6. Step weirs level?  Yes  No\*  N/A
7. Effluent D.O. level: Not ascertained
8. General condition:  Good  Fair  Poor\*

**Comments:** None

UNIT PROCESS: Effluent/Plant Outfall

1. Type outfall:       Shore based       Submerged
2. Type if shore based:       Wingwall       Headwall       Rip Rap       N/A
3. Flapper valve?       Yes       No
4. Erosion of bank?       Yes\*       No       N/A
5. Effluent plume visible?       Yes \*       No

**Comments:** Not inspected due to remote location.

6. Condition of outfall and supporting structures:       Good       Fair       Poor \* (**not inspected**)
7. Final effluent, evidence of following problems: (**not inspected**)
- a. Oil sheen?       Yes\*       No
  - b. Grease?       Yes\*       No
  - c. Sludge bar?       Yes\*       No
  - d. Turbid effluent?       Yes\*       No
  - e. Visible foam?       Yes\*       No
  - f. Unusual odor?       Yes\*       No

**Comments:** Recommend periodic inspection of outfall right-of-way and outfall structure for proper operation.

CC:

- [x] Operator: Mr. Kevin Spruth
- [x] DEQ - Regional Office File

**Attachment E: Ambient Stream Data (Station 3-  
RUN001.39 and 3-TBS001.08)**

### Ambient Stream Data- Station 3-RUN001.39

Station ID	Collection Date	Depth Desc	Depth	Temp Celcius	Field Ph	Do Probe	Salinity
3-RUN001.39	3/1/2002	S	0.3	8.49	6.1	11.4	0
3-RUN001.39	3/21/2002	S	0.3	11.57	6.34	10.76	0
3-RUN001.39	4/29/2002	S	0.3	19.7	6.5	8.47	0
3-RUN001.39	1/16/2003	S	0.3	4.34	5.67	13.22	0
3-RUN001.39	2/26/2003	S	0.3	3.34	5.6	12.6	
3-RUN001.39	3/19/2003	S	0.3	13.12	5.74	9.9	0
3-RUN001.39	4/8/2003	S	0.3	10.91	6.07	10.82	0
3-RUN001.39	5/6/2003	S	0.3	16.74	6.11	9.54	0
3-RUN001.39	6/2/2003	S	0.3	19.32	6.26	9.09	0
3-RUN001.39	7/2/2003	S	0.3	25.66	6.86	8.2	0
3-RUN001.39	8/7/2003	S	0.3	27.17	7.13	7.78	0
3-RUN001.39	9/4/2003	S	0.3	25.79	6.79	7.72	0
3-RUN001.39	9/30/2003	S	0.3	16.64	6.29	5.24	0
3-RUN001.39	11/3/2003	S	0.3	16.26	6.25	9.12	0
3-RUN001.39	12/5/2003	S	0.3	4.89	6.49	12.42	0
<b>90th Percentile</b>				<b>25.7</b>	<b>6.8</b>		
<b>10th Percentile</b>				<b>4.6</b>	<b>5.7</b>		

\*\*\*\*\*

### Hardness Data- Station 3-TBS001.08

Sta Id	Collection Date Time	Depth Desc	Depth	Container Id Desc	Hardness, Total (mg/L CaCO3)
3-TBS001.08	07/01/2003 13:15	S	0.3	R	17
3-TBS001.08	09/29/2003 13:00	S	0.3	R	14.1
3-TBS001.08	11/24/2003 13:15	S	0.3	R	11
3-TBS001.08	01/22/2004 13:19	S	0.3	S1	11
3-TBS001.08	04/06/2004 13:25	S	0.3	R	10
3-TBS001.08	05/10/2004 14:30	S	0.3	R	10
3-TBS001.08	08/09/2004 12:45	S	0.3	R	10
3-TBS001.08	10/04/2004 13:35	S	0.3	R	13.1
3-TBS001.08	12/28/2004 12:50	S	0.3	R	10
3-TBS001.08	02/10/2005 13:30	S	0.3	R	10
3-TBS001.08	04/28/2005 14:00	S	0.3	R	20.4
<b>Average</b>					<b>12.4</b>

**Attachment F: Effluent Data: DMR data, Water Quality  
Criteria Monitoring**

**pH DMR data and percentile calculation**

Minimum pH (SU)	Maximum pH (SU)	DMR due date
7.4	8.3	10-May-00
7.5	8.3	10-Jun-00
6.9	8.3	10-Jul-00
7.6	8.1	10-Aug-00
7.6	7.9	10-Sep-00
7.7	8	10-Oct-00
7.55	8.04	10-Nov-00
7.6	7.9	10-Dec-00
7	8	10-Jan-01
7	8	10-Feb-01
7	8	10-Mar-01
7	7	10-Apr-01
7	8	10-May-01
7	8	10-Jun-01
7	8	10-Jul-01
7	8	10-Aug-01
7	8	10-Sep-01
7	8	10-Oct-01
7	8	10-Nov-01
7	8	10-Dec-01
7	NULL	10-Jan-02
7	8	10-Feb-02
7	8	10-Mar-02
7	8	10-Apr-02
NULL	8	10-May-02
7	7	10-Jun-02
7	7	10-Jul-02
7	8	10-Aug-02
7	8	10-Sep-02
7	8	10-Oct-02
7	8	10-Nov-02
7.4	7.9	10-Dec-02
7.45	7.85	10-Jan-03
7.57	7.91	10-Feb-03
7.54	8.06	10-Mar-03
7.44	7.89	10-Apr-03
7.21	NULL	10-May-03
7.3	7.87	10-Jun-03

Minimum pH (SU)	Maximum pH (SU)	DMR due date
NULL	7.88	10-Jul-03
7.62	8.01	10-Aug-03
7.6	7.93	10-Sep-03
NULL	NULL	10-Nov-02
7.5	7.93	10-Nov-03
7.8	8.3	10-Dec-03
7.7	8.7	10-Jan-04
7.65	NULL	10-Feb-04
7.41	8.01	10-Mar-04
7.56	8.03	10-Apr-04
7.35	7.86	10-May-04
7.39	7.93	10-Jun-04
7.65	7.95	10-Jul-04
7.4	7.95	10-Aug-04
7.37	7.95	10-Sep-04
7.12	NULL	10-Oct-04
7.58	8.45	10-Nov-04
7.61	8.21	10-Dec-04
7.58	8.25	10-Jan-05
7.51	8.35	10-Feb-05
7.16	7.89	10-Mar-05
7.18	7.91	10-Apr-05
7.3	8.53	10-May-05
7.37	8.2	10-Jun-05
7.2	7.93	10-Jul-05
7.16	7.89	10-Aug-05
7.52	NULL	10-Sep-05
7.66	8.32	10-Oct-05
7.39	7.91	10-Nov-05
7.47	NULL	10-Dec-05
7.5	7.78	10-Jan-06
7.62	7.96	10-Feb-06
7.5	8.01	10-Mar-06
7.06	8.12	10-Apr-06
7.6	7.96	10-May-06
7.39	NULL	10-Jun-06
7.29	7.7	10-Jul-06
7.28	7.85	10-Aug-06
7.21	8.08	10-Sep-06
7.12	8	10-Oct-06

Minimum pH (SU)	Maximum pH (SU)	DMR due date
7.12	7.83	10-Nov-06
7.28	7.71	10-Dec-06
7.41	7.98	10-Jan-07
7.25	7.86	10-Feb-07
NULL	NULL	10-Dec-02
7.36	7.67	10-Apr-07
7.41	7.69	10-May-07
7.39	7.64	10-Jun-07
7.4	7.61	10-Jul-07
7.41	8.85	NULL
7.32	7.91	10-Sep-07
7.43	7.73	10-Oct-07
7.47	7.64	10-Nov-07
7.41	7.84	10-Dec-07
7.2	7.84	10-Jan-08
7.35	7.71	10-Feb-08
7.43	7.63	10-Mar-08
7.4	7.66	10-Apr-08
7.48	7.59	10-May-08
7.41	7.59	10-Jun-08
7.44	7.64	10-Jul-08
7.42	7.75	10-Aug-08
7.26	8.02	10-Feb-01
7.09	8.06	10-Oct-08
6.72	NULL	10-Nov-08
6.7	8.7	10-May-01
7.68	8.08	10-Jan-09
7.65	7.95	10-Feb-09
7.62	7.92	10-Mar-09
7.7	7.95	10-Apr-09
7.69	8.02	10-May-09
7.74	8.01	10-Jun-09
7.67	8	10-Jul-09
7.83	8	10-Aug-09
7.79	7.99	10-Sep-09
7.68	7.98	10-Oct-09
7.71	7.89	10-Nov-09
7.55	7.87	NULL
7.59	7.88	10-Jan-10
7.64	7.92	10-Feb-10

Minimum pH (SU)	Maximum pH (SU)	DMR due date
7.67	7.87	10-Mar-10
7.67	7.94	10-Apr-10
7.77	8.13	10-May-10
7.74	7.89	10-Nov-02
7.81	8.02	10-Jul-10
7.72	8.12	10-Aug-10
7.76	NULL	10-Sep-10
7.81	8.08	10-Oct-10
NULL	NULL	10-Nov-10
7.98	8.11	10-May-00
7.9	8.19	10-Jan-11
<b>90<sup>th</sup> percentile max:</b>	8.2	
<b>10<sup>th</sup> percentile max:</b>	7.7	

Permit No:VA0072729

Outfall 001

**DMR DATA**

Parameter	Parameter Description	Quant Avg	Quanti Max	Conc Avg	Conc Min	Conc Max	Due Date
001	FLOW	0.051	0.101	NULL	NULL	NULL	10-Feb-05
		0.0066	0.0098	NULL	NULL	NULL	10-Mar-05
		0.069	0.094	NULL	NULL	NULL	10-Apr-05
		0.076	0.123	NULL	NULL	NULL	10-May-05
		0.068	0.113	NULL	NULL	NULL	10-Jun-05
		0.072	0.099	NULL	NULL	NULL	10-Jul-05
		0.065	0.102	NULL	NULL	NULL	10-Aug-05
		0.052	0.070	NULL	NULL	NULL	10-Sep-05
		0.051	0.079	NULL	NULL	NULL	10-Oct-05
		0.058	0.080	NULL	NULL	NULL	10-Nov-05
		0.060	0.081	NULL	NULL	NULL	10-Dec-05
		0.054	0.080	NULL	NULL	NULL	10-Jan-06
		0.055	0.127	NULL	NULL	NULL	10-Feb-06
		0.049	0.080	NULL	NULL	NULL	10-Mar-06
		0.046	0.087	NULL	NULL	NULL	10-Apr-06
		0.045	0.069	NULL	NULL	NULL	10-May-06
		0.050	0.072	NULL	NULL	NULL	10-Jun-06
		0.043	0.064	NULL	NULL	NULL	10-Jul-06
		0.039	0.046	NULL	NULL	NULL	10-Aug-06
		0.049	0.073	NULL	NULL	NULL	10-Sep-06
		0.051	0.075	NULL	NULL	NULL	10-Oct-06
		0.049	0.106	NULL	NULL	NULL	10-Nov-06
		0.050	NULL	NULL	NULL	NULL	10-Dec-06
		0.049	0.068	NULL	NULL	NULL	10-Jan-07
		0.051	0.083	NULL	NULL	NULL	10-Feb-07
		0.045	0.069	NULL	NULL	NULL	10-Mar-07
		0.050	0.089	NULL	NULL	NULL	10-Apr-07
		0.050	0.085	NULL	NULL	NULL	10-May-07
		0.052	0.091	NULL	NULL	NULL	10-Jun-07
		0.053	0.088	NULL	NULL	NULL	10-Jul-07
		0.049	0.079	NULL	NULL	NULL	10-Aug-07
		0.052	0.129	NULL	NULL	NULL	10-Sep-07
		0.048	0.064	NULL	NULL	NULL	10-Oct-07
		0.040	0.072	NULL	NULL	NULL	10-Nov-07
		0.029	0.051	NULL	NULL	NULL	10-Dec-07
		0.030	0.058	NULL	NULL	NULL	10-Jan-08
		0.035	0.054	NULL	NULL	NULL	10-Feb-08
		0.041	0.077	NULL	NULL	NULL	10-Mar-08
		0.042	0.102	NULL	NULL	NULL	10-Apr-08
		0.052	0.092	NULL	NULL	NULL	10-May-08
		0.048	0.112	NULL	NULL	NULL	10-Jun-08
		0.044	0.097	NULL	NULL	NULL	10-Jul-08
		0.044	0.072	NULL	NULL	NULL	10-Aug-08
		0.0457	.0603	NULL	NULL	NULL	10-Sep-08
		0.0502	0.0710	NULL	NULL	NULL	10-Oct-08
		.040	.071	NULL	NULL	NULL	10-Nov-08
		0.045	0.079	NULL	NULL	NULL	10-Dec-08
		0.042	0.074	NULL	NULL	NULL	10-Jan-09
		0.039	0.063	NULL	NULL	NULL	10-Feb-09

		0.042	0.075	NULL	NULL	NULL	10-Mar-09
		0.044	0.064	NULL	NULL	NULL	10-Apr-09
		0.048	0.067	NULL	NULL	NULL	10-May-09
		0.049	0.065	NULL	NULL	NULL	10-Jun-09
		0.048	0.073	NULL	NULL	NULL	10-Jul-09
		.0460	.0670	NULL	NULL	NULL	10-Aug-09
		0.048	0.082	NULL	NULL	NULL	10-Sep-09
		0.045	0.060	NULL	NULL	NULL	10-Oct-09
		0.046	0.061	NULL	NULL	NULL	10-Nov-09
		0.055	0.153	NULL	NULL	NULL	10-Dec-09
		0.058	0.088	NULL	NULL	NULL	10-Jan-10
		0.054	0.070	NULL	NULL	NULL	10-Feb-10
		0.065	0.095	NULL	NULL	NULL	10-Mar-10
		0.066	0.098	NULL	NULL	NULL	10-Apr-10
		0.060	0.077	NULL	NULL	NULL	10-May-10
		0.051	0.074	NULL	NULL	NULL	10-Jun-10
		0.044	0.057	NULL	NULL	NULL	10-Jul-10
		0.040	0.0666	NULL	NULL	NULL	10-Aug-10
		0.049	0.070	NULL	NULL	NULL	10-Sep-10
		0.052	0.107	NULL	NULL	NULL	10-Oct-10
		0.052	0.093	NULL	NULL	NULL	10-Nov-10
		0.045	0.069	NULL	NULL	NULL	10-Dec-10
		0.036	0.058	NULL	NULL	NULL	10-Jan-11
		0.034	0.049	NULL	NULL	NULL	10-Feb-11
		0.041	0.055	NULL	NULL	NULL	10-Mar-11
004	TSS	0.43	0.43	2.20	NULL	2.20	10-Feb-05
		0.03	0.03	1.30	NULL	1.30	10-Mar-05
		1.04	1.04	3.60	NULL	3.60	10-Apr-05
		0.84	0.84	3.10	NULL	3.10	10-May-05
		0.20	0.20	0.90	NULL	0.90	10-Jun-05
		0.50	0.50	1.80	NULL	1.80	10-Jul-05
		0.29	0.29	1.10	NULL	1.10	10-Aug-05
		0.39	0.39	1.70	NULL	1.70	10-Sep-05
		0.21	0.21	1.40	NULL	1.40	10-Oct-05
		0.52	0.52	2.20	NULL	2.20	10-Nov-05
		0.63	0.63	4.30	NULL	4.30	10-Dec-05
		0.68	0.68	2.70	NULL	2.70	10-Jan-06
		0.31	0.31	1.60	NULL	1.60	10-Feb-06
		0.60	0.60	3.10	NULL	3.10	10-Mar-06
		0.51	0.51	2.80	NULL	2.80	10-Apr-06
		0.34	0.34	2.20	NULL	2.20	10-May-06
		0.31	0.31	2.20	NULL	2.20	10-Jun-06
		0.07	0.07	0.40	NULL	0.40	10-Jul-06
		0.81	0.81	5.80	NULL	5.80	10-Aug-06
		0.17	0.17	0.80	NULL	0.80	10-Sep-06
		0.20	0.20	1.00	NULL	1.00	10-Oct-06
		0.16	0.16	1.00	NULL	1.00	10-Nov-06
		0.20	0.20	1.00	NULL	1.00	10-Dec-06
		0.19	0.19	1.00	NULL	1.00	10-Jan-07
		0.60	0.60	3.10	NULL	3.10	10-Feb-07
		0.48	0.48	2.00	NULL	2.00	10-Mar-07
		1.19	1.19	6.57	NULL	6.57	10-Apr-07

006	COLIFORM, FECAL	0.45	0.45	2.80	NULL	2.80	10-May-07
		0.30	0.30	1.30	NULL	1.30	10-Jun-07
		0.66	0.66	2.60	NULL	2.60	10-Jul-07
		0.33	0.33	2.50	NULL	2.50	10-Aug-07
		0.02	0.02	0.80	NULL	0.80	10-Sep-07
		.27	.27	1.60	NULL	1.60	10-Oct-07
		0.66	0.66	3.70	NULL	3.70	10-Nov-07
		0.21	0.21	2.20	NULL	2.20	10-Dec-07
		0.10	0.10	1.70	NULL	1.70	10-Jan-08
		0.55	0.55	3.60	NULL	3.60	10-Feb-08
		0.65	0.65	4.30	NULL	4.30	10-Mar-08
		0.25	0.25	2.40	NULL	2.40	10-Apr-08
		0.66	0.66	3.30	NULL	3.30	10-May-08
		0.32	0.32	3.40	NULL	3.40	10-Jun-08
		0.55	0.55	3.40	NULL	3.40	10-Jul-08
		0.96	0.96	4.70	NULL	4.70	10-Aug-08
		0.59	0.59	4.6	NULL	4.6	10-Sep-08
		0.93	0.93	3.6	NULL	3.6	10-Oct-08
		2.39	4.18	15.7	NULL	24.0	10-Nov-08
		0.2	0.2	1.2	NULL	1.2	10-Dec-08
		0.34	0.34	3.6	NULL	3.6	10-Jan-09
		0.37	0.37	2.7	NULL	2.7	10-Feb-09
		0.64	0.64	3.3	NULL	3.3	10-Mar-09
		0.22	0.22	2.4	NULL	2.4	10-Apr-09
		0.40	0.40	2.4	NULL	2.4	10-May-09
		0.27	0.27	1.5	NULL	1.5	10-Jun-09
		0.71	0.71	3.4	NULL	3.4	10-Jul-09
		<QL	<QL	<QL	NULL	<QL	10-Aug-09
		<QL	<QL	<QL	NULL	<QL	10-Sep-09
		0.30	0.30	1.7	NULL	1.7	10-Oct-09
		0.23	0.23	1.2	NULL	1.2	10-Nov-09
		0.15	0.15	2.0	NULL	2.0	10-Dec-09
		0.86	0.86	4.8	NULL	4.8	10-Jan-10
		1.55	1.94	8.0	NULL	10.0	10-Feb-10
		1.64	1.64	10.0	NULL	10.0	10-Mar-10
		0.76	0.76	2.2	NULL	2.2	10-Apr-10
		0.42	0.42	2.2	NULL	2.2	10-May-10
		0.63	0.63	3.0	NULL	3.0	10-Jun-10
		<QL	<QL	<QL	NULL	<QL	10-Jul-10
		0.19	0.19	1.5	NULL	1.5	10-Aug-10
		<QL	<QL	<QL	NULL	<QL	10-Sep-10
		<QL	<QL	<QL	NULL	<QL	10-Oct-10
		<QL	<QL	<QL	NULL	<QL	10-Nov-10
		<QL	<QL	<QL	NULL	<QL	10-Dec-10
		0.31	0.31	2.0	NULL	2.0	10-Jan-11
		<QL	<QL	<QL	NULL	<QL	10-Feb-11
		<QL	<QL	<QL	NULL	<QL	10-Mar-11
		NULL	NULL	42	NULL	NULL	10-Feb-05
		NULL	NULL	3	NULL	NULL	10-Mar-05
		NULL	NULL	3	NULL	NULL	10-Apr-05
		NULL	NULL	7	NULL	NULL	10-May-05
		NULL	NULL	5	NULL	NULL	10-Jun-05

		NULL	NULL	32	NULL	NULL	10-Jul-05
		NULL	NULL	5	NULL	NULL	10-Aug-05
		NULL	NULL	8	NULL	NULL	10-Sep-05
		NULL	NULL	8	NULL	NULL	10-Oct-05
		NULL	NULL	2	NULL	NULL	10-Nov-05
		NULL	NULL	6	NULL	NULL	10-Dec-05
		NULL	NULL	2	NULL	NULL	10-Jan-06
		NULL	NULL	2.00	NULL	NULL	10-Feb-06
		NULL	NULL	2	NULL	NULL	10-Mar-06
		NULL	NULL	6.5	NULL	NULL	10-Apr-06
		NULL	NULL	2.00	NULL	NULL	10-May-06
		NULL	NULL	2.00	NULL	NULL	10-Jun-06
		NULL	NULL	X	NULL	NULL	10-Jul-06
		NULL	NULL	2.00	NULL	NULL	10-Aug-06
		NULL	NULL	2	NULL	NULL	10-Sep-06
		NULL	NULL	2	NULL	NULL	10-Oct-06
		NULL	NULL	X	NULL	NULL	10-Nov-06
		NULL	NULL	X	NULL	NULL	10-Dec-06
		NULL	NULL	8.34	NULL	NULL	10-Jan-07
		NULL	NULL	X	NULL	NULL	10-Feb-07
		NULL	NULL	X	NULL	NULL	10-Mar-07
		NULL	NULL	X	NULL	NULL	10-Apr-07
		NULL	NULL	6.5	NULL	NULL	10-May-07
		NULL	NULL	X	NULL	NULL	10-Jun-07
		NULL	NULL	1	NULL	NULL	10-Jul-07
		NULL	NULL	X	NULL	NULL	10-Aug-07
		NULL	NULL	1.00	NULL	NULL	10-Sep-07
		NULL	NULL	NR	NULL	NULL	10-Jan-10
		NULL	NULL	X	NULL	NULL	10-Feb-10
		NULL	NULL	NR	NULL	NULL	10-Mar-10
		NULL	NULL	NR	NULL	NULL	10-Apr-10
		NULL	NULL	NR	NULL	NULL	10-Aug-10
		NULL	NULL	8.19	NULL	NULL	10-Nov-10
007	DO	NULL	NULL	NULL	7.93	NULL	10-Feb-05
		NULL	NULL	NULL	9.84	NULL	10-Mar-05
		NULL	NULL	NULL	10.08	NULL	10-Apr-05
		NULL	NULL	NULL	8.61	NULL	10-May-05
		NULL	NULL	NULL	7.83	NULL	10-Jun-05
		NULL	NULL	NULL	7.91	NULL	10-Jul-05
		NULL	NULL	NULL	7.21	NULL	10-Aug-05
		NULL	NULL	NULL	7.14	NULL	10-Sep-05
		NULL	NULL	NULL	7.51	NULL	10-Oct-05
		NULL	NULL	NULL	7.75	NULL	10-Nov-05
		NULL	NULL	NULL	8.14	NULL	10-Dec-05
		NULL	NULL	NULL	8.84	NULL	10-Jan-06
		NULL	NULL	NULL	7.13	NULL	10-Feb-06
		NULL	NULL	NULL	8.63	NULL	10-Mar-06
		NULL	NULL	NULL	9.02	NULL	10-Apr-06
		NULL	NULL	NULL	8.78	NULL	10-May-06
		NULL	NULL	NULL	7.18	NULL	10-Jun-06
		NULL	NULL	NULL	7.30	NULL	10-Jul-06
		NULL	NULL	NULL	6.93	NULL	10-Aug-06

NULL	NULL	NULL	7.10	NULL	10-Sep-06
NULL	NULL	NULL	7.19	NULL	10-Oct-06
NULL	NULL	NULL	7.44	NULL	10-Nov-06
NULL	NULL	NULL	8.76	NULL	10-Dec-06
NULL	NULL	NULL	8.76	NULL	10-Jan-07
NULL	NULL	NULL	9.17	NULL	10-Feb-07
NULL	NULL	NULL	9.23	NULL	10-Mar-07
NULL	NULL	NULL	9.12	NULL	10-Apr-07
NULL	NULL	NULL	9.21	NULL	10-May-07
NULL	NULL	NULL	8.29	NULL	10-Jun-07
NULL	NULL	NULL	8.27	NULL	10-Jul-07
NULL	NULL	NULL	7.40	NULL	10-Aug-07
NULL	NULL	NULL	7.32	NULL	10-Sep-07
NULL	NULL	NULL	7.40	NULL	10-Oct-07
NULL	NULL	NULL	7.40	NULL	10-Nov-07
NULL	NULL	NULL	7.48	NULL	10-Dec-07
NULL	NULL	NULL	8.31	NULL	10-Jan-08
NULL	NULL	NULL	7.57	NULL	10-Feb-08
NULL	NULL	NULL	8.45	NULL	10-Mar-08
NULL	NULL	NULL	8.46	NULL	10-Apr-08
NULL	NULL	NULL	8.51	NULL	10-May-08
NULL	NULL	NULL	8.41	NULL	10-Jun-08
NULL	NULL	NULL	8.48	NULL	10-Jul-08
NULL	NULL	NULL	8.51	NULL	10-Aug-08
NULL	NULL	NULL	7.33	NULL	10-Sep-08
NULL	NULL	NULL	8.17	NULL	10-Oct-08
NULL	NULL	NULL	7.61	NULL	10-Nov-08
NULL	NULL	NULL	8.3	NULL	10-Dec-08
NULL	NULL	NULL	9.78	NULL	10-Jan-09
NULL	NULL	NULL	10.26	NULL	10-Feb-09
NULL	NULL	NULL	11.09	NULL	10-Mar-09
NULL	NULL	NULL	9.58	NULL	10-Apr-09
NULL	NULL	NULL	9.04	NULL	10-May-09
NULL	NULL	NULL	8.46	NULL	10-Jun-09
NULL	NULL	NULL	7.43	NULL	10-Jul-09
NULL	NULL	NULL	8.0	NULL	10-Aug-09
NULL	NULL	NULL	7.50	NULL	10-Sep-09
NULL	NULL	NULL	8.02	NULL	10-Oct-09
NULL	NULL	NULL	8.38	NULL	10-Nov-09
NULL	NULL	NULL	8.4	NULL	10-Dec-09
NULL	NULL	NULL	9.4	NULL	10-Jan-10
NULL	NULL	NULL	11.39	NULL	10-Feb-10
NULL	NULL	NULL	11.22	NULL	10-Mar-10
NULL	NULL	NULL	10.41	NULL	10-Apr-10
NULL	NULL	NULL	8.96	NULL	10-May-10
NULL	NULL	NULL	8.18	NULL	10-Jun-10
NULL	NULL	NULL	7.47	NULL	10-Jul-10
NULL	NULL	NULL	6.82	NULL	10-Aug-10
NULL	NULL	NULL	7.20	NULL	10-Sep-10
NULL	NULL	NULL	7.48	NULL	10-Oct-10
NULL	NULL	NULL	8.19	NULL	10-Nov-10
NULL	NULL	NULL	8.13	NULL	10-Dec-10

012	TP (as P)	NULL	NULL	NULL	10.09	NULL	10-Jan-11
		NULL	NULL	NULL	10.83	NULL	10-Feb-11
		NULL	NULL	NULL	10.45	NULL	10-Mar-11
		0.03	NULL	0.15	NULL	NULL	10-Feb-05
		0.01	NULL	0.42	NULL	NULL	10-Mar-05
		0.09	NULL	0.29	NULL	NULL	10-Apr-05
		0.05	NULL	0.15	NULL	NULL	10-May-05
		0.06	0.34	NULL	NULL	NULL	10-Jun-05
		0.28	NULL	1.24	NULL	NULL	10-Jul-05
		0.05	NULL	0.29	NULL	NULL	10-Aug-05
		0.06	NULL	0.49	NULL	NULL	10-Sep-05
		0.35	NULL	1.55	NULL	NULL	10-Oct-05
		0.12	NULL	0.46	NULL	NULL	10-Nov-05
		0.06	NULL	0.31	NULL	NULL	10-Dec-05
		0.15	NULL	0.81	NULL	NULL	10-Jan-06
		0.06	NULL	0.20	NULL	NULL	10-Feb-06
		0.04	NULL	0.21	NULL	NULL	10-Mar-06
		0.07	NULL	0.38	NULL	NULL	10-Apr-06
		.23	NULL	1.61	NULL	NULL	10-May-06
		0.14	NULL	0.85	NULL	NULL	10-Jun-06
		0.45	NULL	2.57	NULL	NULL	10-Jul-06
		0.16	NULL	1.25	NULL	NULL	10-Aug-06
		0.15	NULL	0.84	NULL	NULL	10-Sep-06
		0.14	NULL	0.77	NULL	NULL	10-Oct-06
		0.23	NULL	1.41	NULL	NULL	10-Nov-06
		0.23	NULL	1.24	NULL	NULL	10-Dec-06
		0.16	NULL	0.66	NULL	NULL	10-Jan-07
		0.08	NULL	0.31	NULL	NULL	10-Feb-07
		0.05	NULL	0.34	NULL	NULL	10-Mar-07
		0.07	NULL	0.40	NULL	NULL	10-Apr-07
		0.02	NULL	0.14	NULL	NULL	10-May-07
		0.11	NULL	0.51	NULL	NULL	10-Jun-07
		0.35	NULL	1.63	NULL	NULL	10-Jul-07
		0.10	NULL	0.51	NULL	NULL	10-Aug-07
		0.10	NULL	0.54	NULL	NULL	10-Sep-07
		0.02	NULL	0.16	NULL	NULL	10-Oct-07
		0.07	NULL	0.44	NULL	NULL	10-Nov-07
		0.05	NULL	0.52	NULL	NULL	10-Dec-07
		0.03	NULL	0.37	NULL	NULL	10-Jan-08
		0.40	NULL	1.98	NULL	NULL	10-Feb-08
		1.469	NULL	0.33	NULL	NULL	10-Mar-08
		0.03	NULL	0.25	NULL	NULL	10-Apr-08
		0.07	NULL	0.34	NULL	NULL	10-May-08
		0.07	NULL	0.54	NULL	NULL	10-Jun-08
		0.22	NULL	1.25	NULL	NULL	10-Jul-08
		0.35	NULL	1.75	NULL	NULL	10-Aug-08
		0.16	NULL	0.95	NULL	NULL	10-Sep-08
		0.14	NULL	0.94	NULL	NULL	10-Oct-08
		<QL	NULL	1103	NULL	NULL	10-Nov-08
		0.21	NULL	1.14	NULL	NULL	10-Dec-08
		0.18	NULL	1.48	NULL	NULL	10-Jan-09
		0.30	NULL	2.1	NULL	NULL	10-Feb-09

0.28	NULL	1.63	NULL	NULL	10-Mar-09		
0.32	NULL	2.34	NULL	NULL	10-Apr-09		
0.29	NULL	2.0	NULL	NULL	10-May-09		
0.52	NULL	2.21	NULL	NULL	10-Jun-09		
0.27	NULL	1.60	NULL	NULL	10-Jul-09		
0.21	NULL	1.3	NULL	NULL	10-Aug-09		
0.29	NULL	1.13	NULL	NULL	10-Sep-09		
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0.25	NULL	1.6	NULL	NULL	10-Nov-09		
0.32	NULL	1.43	NULL	NULL	10-Dec-09		
0.36	NULL	1.31	NULL	NULL	10-Jan-10		
0.20	NULL	1.07	NULL	NULL	10-Feb-10		
0.17	NULL	0.88	NULL	NULL	10-Mar-10		
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0.30	NULL	1.24	NULL	NULL	10-May-10		
0.41	NULL	2.13	NULL	NULL	10-Jun-10		
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0.18	NULL	1.14	NULL	NULL	10-Dec-10		
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0.14	NULL	1.10	NULL	NULL	10-Feb-11		
0.13	NULL	0.96	NULL	NULL	10-Mar-11		
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		1.05	NULL	4.42	NULL	NULL	10-May-05
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		0.93	NULL	4.49	NULL	NULL	10-Oct-05
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		1.82	NULL	5.40	NULL	NULL	10-Feb-06
		1.650	NULL	8.80	NULL	NULL	10-Mar-06
		1.52	NULL	7.35	NULL	NULL	10-Apr-06
		0.85	NULL	5.90	NULL	NULL	10-May-06
		1.31	NULL	7.80	NULL	NULL	10-Jun-06
		0.61	NULL	3.70	NULL	NULL	10-Jul-06
		0.66	NULL	4.60	NULL	NULL	10-Aug-06
		0.90	NULL	4.90	NULL	NULL	10-Sep-06
		0.71	NULL	4.50	NULL	NULL	10-Oct-06
		1.41	NULL	8.10	NULL	NULL	10-Nov-06
		0.54	NULL	3.17	NULL	NULL	10-Dec-06
		2.12	NULL	8.40	NULL	NULL	10-Jan-07
		1.14	NULL	4.61	NULL	NULL	10-Feb-07
		0.86	NULL	5.16	NULL	NULL	10-Mar-07
		2.18	NULL	12.14	NULL	NULL	10-Apr-07

		0.44	NULL	3.09	NULL	NULL	10-May-07
		1.23	NULL	6.07	NULL	NULL	10-Jun-07
		1.30	NULL	4.15	NULL	NULL	10-Jul-07
		1.19	NULL	5.96	NULL	NULL	10-Aug-07
		0.36	NULL	3.06	NULL	NULL	10-Sep-07
019	COPPER, TOTAL (as CU)	NULL	NULL	NR	NULL	NR	10-Jan-09
		NULL	NULL	6.1	NULL	6.1	10-Feb-09
		NULL	NULL	5.5	NULL	5.5	10-Mar-09
		NULL	NULL	7.2	NULL	7.2	10-Apr-09
		NULL	NULL	5.7	NULL	5.7	10-May-09
		NULL	NULL	3.8	NULL	3.8	10-Jun-09
		NULL	NULL	3.4	NULL	3.4	10-Jul-09
		NULL	NULL	4.8	NULL	4.8	10-Aug-09
		NULL	NULL	6.2	NULL	6.2	10-Sep-09
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		NULL	NULL	6.6	NULL	6.6	10-Nov-09
		NULL	NULL	6.0	NULL	6.0	10-Dec-09
		NULL	NULL	5.4	NULL	5.4	10-Jan-10
		NULL	NULL	4.0	NULL	4.0	10-Feb-10
		NULL	NULL	5.1	NULL	5.1	10-Mar-10
		NULL	NULL	4.3	NULL	4.3	10-Apr-10
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		NULL	NULL	5.2	NULL	5.2	10-Dec-10
		NULL	NULL	6.3	NULL	6.3	10-Jan-11
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020	ZINC, TOTAL (AS ZN)	NULL	NULL	NR	NULL	NR	10-Jan-09
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		NULL	NULL	59	NULL	59	10-Mar-09
		NULL	NULL	79.6	NULL	79.6	10-Apr-09
		NULL	NULL	61	NULL	61	10-May-09
		NULL	NULL	58	NULL	58	10-Jun-09
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		NULL	NULL	73	NULL	73	10-Aug-09
		NULL	NULL	66	NULL	66	10-Sep-09
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		NULL	NULL	53	NULL	53	10-Apr-10
		NULL	NULL	49	NULL	49	10-May-10
		NULL	NULL	56	NULL	56	10-Jun-10
		NULL	NULL	62	NULL	62	10-Jul-10
		NULL	NULL	78	NULL	78	10-Aug-10



0.77	1.29	3.67	NULL	6.79	10-Mar-06
0.24	0.19	1.19	NULL	1.03	10-Apr-06
0.52	1.39	2.45	NULL	5.75	10-May-06
1.10	1.71	5.23	NULL	8.18	10-Jun-06
0.35	0.48	2.33	NULL	3.21	10-Jul-06
0.70	1.10	4.92	NULL	8.74	10-Aug-06
0.14	0.20	0.91	NULL	1.11	10-Sep-06
0.14	0.17	0.80	NULL	0.91	10-Oct-06
0.30	0.24	1.55	NULL	1.02	10-Nov-06
0.14	0.23	0.78	NULL	1.22	10-Dec-06
0.30	0.53	1.47	NULL	2.64	10-Jan-07
0.36	0.64	1.77	NULL	2.58	10-Feb-07
1.06	2.03	6.11	NULL	11.23	10-Mar-07
1.74	3.42	9.13	NULL	16.77	10-Apr-07
1.86	5.65	8.05	NULL	21.92	10-May-07
0.36	0.56	1.89	NULL	3.23	10-Jun-07
0.92	2.42	5.86	NULL	18.30	10-Jul-07
1.23	1.92	6.65	NULL	11.06	10-Aug-07
0.26	0.35	1.43	NULL	1.97	10-Sep-07
1.21	1.62	7.39	NULL	10.01	10-Oct-07
0.94	1.19	6.79	NULL	9.02	10-Nov-07
0.62	0.98	5.83	NULL	8.88	10-Dec-07
0.96	1.46	9.90	NULL	20.50	10-Jan-08
0.31	0.36	2.37	NULL	2.82	10-Feb-08
0.32	0.50	1.78	NULL	2.40	10-Mar-08
0.27	0.53	1.73	NULL	3.13	10-Apr-08
0.45	0.63	2.53	NULL	3.90	10-May-08
0.98	1.69	5.36	NULL	8.07	10-Jun-08
0.48	1.02	3.15	NULL	6.47	10-Jul-08
1.20	1.84	7.58	NULL	10.93	10-Aug-08
2.51	5.75	14.76	NULL	29.4	10-Sep-08
1.16	0.66	7.1	NULL	11.1	10-Oct-08
0.91	1.46	7.44	NULL	9.67	10-Nov-08
0.85	NULL	4.53	NULL	5.9	10-Dec-08
0.47	0.43	3.15	NULL	2.6	10-Jan-09
0.47	0.65	3.30	NULL	4.38	10-Feb-09
0.68	0.94	4.24	NULL	5.32	10-Mar-09
0.38	0.58	2.67	NULL	3.77	10-Apr-09
0.23	0.36	1.42	NULL	2.33	10-May-09
0.21	0.25	1.17	NULL	1.35	10-Jun-09
0.75	2.11	4.33	NULL	11.90	10-Jul-09
0.15	0.15	0.99	NULL	0.97	10-Aug-09
0.13	0.15	0.82	NULL	0.88	10-Sep-09
0.18	0.27	1.11	NULL	1.59	10-Oct-09
0.20	0.31	1.30	NULL	2.21	10-Nov-09
0.17	0.21	1.01	NULL	1.24	10-Dec-09
0.26	0.44	1.22	NULL	1.97	10-Jan-10
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0.24	0.53	0.88	NULL	1.53	10-Mar-10
0.24	0.31	0.95	NULL	1.34	10-Apr-10
0.30	0.37	1.38	NULL	1.79	10-May-10
0.22	0.36	1.14	NULL	1.49	10-Jun-10

		0.21	0.28	1.23	NULL	1.71	10-Jul-10
		0.09	0.14	0.61	NULL	0.92	10-Aug-10
		0.11	0.16	0.59	NULL	0.82	10-Sep-10
		0.17	0.28	0.90	NULL	1.52	10-Oct-10
		0.19	0.35	0.96	NULL	1.57	10-Nov-10
		0.17	0.22	1.40	NULL	1.48	10-Dec-10
		0.09	0.28	0.66	NULL	1.76	10-Jan-11
		0.11	0.10	0.90	NULL	1.39	10-Feb-11
		0.16	0.22	1.05	NULL	1.44	10-Mar-11
120	E.COLI	NULL	NULL	10.49	NULL	NULL	10-Oct-07
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		NULL	NULL	1	NULL	NULL	10-Apr-08
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		NULL	NULL	13.9348	NULL	NULL	10-Apr-10
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		NULL	NULL	<QL	NULL	NULL	10-Feb-11
		NULL	NULL	<QL	NULL	NULL	10-Mar-11
159	CBOD5	0.51	0.54	2.72	NULL	3.29	10-Feb-05

0.05	0.05	2.06	NULL	2.00	10-Mar-05
0.71	1.01	2.47	NULL	3.25	10-Apr-05
0.87	NULL	2.76	NULL	4.77	10-May-05
0.74	0.95	2.77	NULL	3.66	10-Jun-05
2.36	5.96	8.62	NULL	20.60	10-Jul-05
0.80	1.03	3.40	NULL	3.29	10-Aug-05
0.65	1.12	3.12	NULL	5.26	10-Sep-05
0.41	0.50	2.17	NULL	2.51	10-Oct-05
0.55	0.81	2.44	NULL	3.04	10-Nov-05
0.47	0.65	2.07	NULL	2.59	10-Dec-05
0.57	1.08	2.94	NULL	4.96	10-Jan-06
0.73	1.00	3.28	NULL	4.52	10-Feb-06
0.98	1.37	5.32	NULL	6.95	10-Mar-06
0.44	0.40	2.33	NULL	2.52	10-Apr-06
0.48	0.70	2.69	NULL	3.59	10-May-06
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0.41	0.52	2.05	NULL	2.21	10-Nov-06
0.36	0.39	2.00	NULL	2.00	10-Dec-06
0.47	0.65	2.41	NULL	3.00	10-Jan-07
0.61	0.80	3.15	NULL	3.08	10-Feb-07
0.48	0.64	2.87	NULL	2.65	10-Mar-07
0.66	0.87	3.31	NULL	3.63	10-Apr-07
0.55	0.73	2.90	NULL	3.02	10-May-07
0.39	0.45	2.07	NULL	2.18	10-Jun-07
0.41	0.54	2.00	NULL	2.00	10-Jul-07
0.43	0.45	2.20	NULL	2.57	10-Aug-07
0.40	0.40	2.00	NULL	2.00	10-Sep-07
0.30	0.34	2.00	NULL	2.00	10-Oct-07
0.32	0.46	2.00	NULL	2.00	10-Nov-07
0.14	0.23	2.00	NULL	2.00	10-Dec-07
0.22	0.25	2.00	NULL	2.00	10-Jan-08
0.26	0.26	2.00	NULL	2.00	10-Feb-08
0.35	0.40	2.00	NULL	2.00	10-Mar-08
0.32	0.44	2.00	NULL	2.00	10-Apr-08
0.38	0.42	2.00	NULL	2.00	10-May-08
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		<QL	<QL	<QL	NULL	<QL	10-Feb-11
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389	NITRITE+	32.86	NULL	4.16	NULL	NULL	10-Feb-05
	NITRATE-N,	1.40	NULL	X	NULL	NULL	10-Mar-05
	TOTAL	37.20	NULL	4.58	NULL	NULL	10-Apr-05
		28.80	NULL	2.69	NULL	NULL	10-May-05
		37.51	NULL	5.56	NULL	NULL	10-Jun-05
		0.25	NULL	0.97	NULL	NULL	10-Jul-05
		6.82	NULL	1.73	NULL	NULL	10-Aug-05
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		0.82	NULL	3.76	NULL	NULL	10-Oct-05
		0.78	NULL	2.71	NULL	NULL	10-Nov-05
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		0.23	NULL	1.46	NULL	NULL	10-May-07
		0.44	NULL	2.10	NULL	NULL	10-Jun-07
		0.47	NULL	2.34	NULL	NULL	10-Jul-07
		0.35	NULL	1.50	NULL	NULL	10-Aug-07

791	NITROGEN, TOTAL (AS N) (MONTHLY LOAD)	0.20	NULL	1.81	NULL	NULL	10-Sep-07
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		NULL	57.97	NULL	NULL	NULL	10-Apr-05
		NULL	47.40	NULL	NULL	NULL	10-May-05
		NULL	40.92	NULL	NULL	NULL	10-Jun-05
		NULL	35.4	NULL	NULL	NULL	10-Jul-05
		NULL	16.12	NULL	NULL	NULL	10-Aug-05
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		NULL	27.9	NULL	NULL	NULL	10-Oct-05
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		NULL	26.10	NULL	NULL	NULL	10-Dec-05
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		NULL	18.3	NULL	NULL	NULL	10-Jul-06
		NULL	20.46	NULL	NULL	NULL	10-Aug-06
		NULL	27.90	NULL	NULL	NULL	10-Sep-06
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		NULL	42.30	NULL	NULL	NULL	10-Nov-06
		NULL	16.20	NULL	NULL	NULL	10-Dec-06
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		NULL	35.34	NULL	NULL	NULL	10-Feb-07
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		NULL	65.41	NULL	NULL	NULL	10-Apr-07
		NULL	13.27	NULL	NULL	NULL	10-May-07
		NULL	36.77	NULL	NULL	NULL	10-Jun-07
		NULL	25.28	NULL	NULL	NULL	10-Jul-07
		NULL	36.80	NULL	NULL	NULL	10-Aug-07
		NULL	10.89	NULL	NULL	NULL	10-Sep-07
792	NITROGEN, TOTAL (AS N) (CALENDAR YEAR)	NULL	56.42	NULL	NULL	NULL	10-Feb-05
		NULL	61.46	NULL	NULL	NULL	10-Mar-05
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		NULL	165.90	NULL	NULL	NULL	10-May-05
		NULL	206.82	NULL	NULL	NULL	10-Jun-05
		NULL	242.22	NULL	NULL	NULL	10-Jul-05
		NULL	258.34	NULL	NULL	NULL	10-Aug-05
		NULL	289.34	NULL	NULL	NULL	10-Sep-05
		NULL	317.24	NULL	NULL	NULL	10-Oct-05
		NULL	412.78	NULL	NULL	NULL	10-Nov-05
		NULL	438.90	NULL	NULL	NULL	10-Dec-05
		NULL	472.07	NULL	NULL	NULL	10-Jan-06
		NULL	56.42	NULL	NULL	NULL	10-Feb-06
		NULL	102.6	NULL	NULL	NULL	10-Mar-06
		NULL	149.72	NULL	NULL	NULL	10-Apr-06
		NULL	175.24	NULL	NULL	NULL	10-May-06
		NULL	215.85	NULL	NULL	NULL	10-Jun-06
		NULL	234.15	NULL	NULL	NULL	10-Jul-06
		NULL	254.61	NULL	NULL	NULL	10-Aug-06

		NULL	282.51	NULL	NULL	NULL	10-Sep-06
		NULL	303.81	NULL	NULL	NULL	10-Oct-06
		NULL	346.11	NULL	NULL	NULL	10-Nov-06
		NULL	362.31	NULL	NULL	NULL	10-Dec-06
		NULL	428.03	NULL	NULL	NULL	10-Jan-07
		NULL	35.34	NULL	NULL	NULL	10-Feb-07
		NULL	59.40	NULL	NULL	NULL	10-Mar-07
		NULL	124.81	NULL	NULL	NULL	10-Apr-07
		NULL	138.08	NULL	NULL	NULL	10-May-07
		NULL	174.85	NULL	NULL	NULL	10-Jun-07
		NULL	200.13	NULL	NULL	NULL	10-Jul-07
		NULL	236.93	NULL	NULL	NULL	10-Aug-07
		NULL	247.82	NULL	NULL	NULL	10-Sep-07
793	PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	NULL	0.93	NULL	NULL	NULL	10-Feb-05
		NULL	0.28	NULL	NULL	NULL	10-Mar-05
		NULL	2.79	NULL	NULL	NULL	10-Apr-05
		NULL	0.9	NULL	NULL	NULL	10-May-05
		NULL	1.86	NULL	NULL	NULL	10-Jun-05
		NULL	8.4	NULL	NULL	NULL	10-Jul-05
		NULL	1.55	NULL	NULL	NULL	10-Aug-05
		NULL	3.10	NULL	NULL	NULL	10-Sep-05
		NULL	10.5	NULL	NULL	NULL	10-Oct-05
		NULL	3.72	NULL	NULL	NULL	10-Nov-05
		NULL	1.80	NULL	NULL	NULL	10-Dec-05
		NULL	4.65	NULL	NULL	NULL	10-Jan-06
		NULL	1.86	NULL	NULL	NULL	10-Feb-06
		NULL	1.12	NULL	NULL	NULL	10-Mar-06
		NULL	2.17	NULL	NULL	NULL	10-Apr-06
		NULL	6.90	NULL	NULL	NULL	10-May-06
		NULL	4.34	NULL	NULL	NULL	10-Jun-06
		NULL	13.5	NULL	NULL	NULL	10-Jul-06
		NULL	4.96	NULL	NULL	NULL	10-Aug-06
		NULL	4.65	NULL	NULL	NULL	10-Sep-06
		NULL	NULL	NULL	4.20	NULL	10-Oct-06
		NULL	7.13	NULL	NULL	NULL	10-Nov-06
		NULL	6.90	NULL	NULL	NULL	10-Dec-06
		NULL	4.96	NULL	NULL	NULL	10-Jan-07
		NULL	2.48	NULL	NULL	NULL	10-Feb-07
		NULL	1.33	NULL	NULL	NULL	10-Mar-07
		NULL	2.10	NULL	NULL	NULL	10-Apr-07
		NULL	0.56	NULL	NULL	NULL	10-May-07
		NULL	3.20	NULL	NULL	NULL	10-Jun-07
		NULL	10.42	NULL	NULL	NULL	10-Jul-07
		NULL	3.06	NULL	NULL	NULL	10-Aug-07
		NULL	3.06	NULL	NULL	NULL	10-Sep-07
794	PHOSPHORUS, TOTAL (AS P) (CALENDAR YEAR)	NULL	0.93	NULL	NULL	NULL	10-Feb-05
		NULL	1.28	NULL	NULL	NULL	10-Mar-05
		NULL	3.35	NULL	NULL	NULL	10-Apr-05
		NULL	3.69	NULL	NULL	NULL	10-May-05
		NULL	5.55	NULL	NULL	NULL	10-Jun-05
		NULL	13.95	NULL	NULL	NULL	10-Jul-05
		NULL	15.5	NULL	NULL	NULL	10-Aug-05

NULL	17.05	NULL	NULL	NULL	10-Sep-05
NULL	27.55	NULL	NULL	NULL	10-Oct-05
NULL	31.27	NULL	NULL	NULL	10-Nov-05
NULL	33.07	NULL	NULL	NULL	10-Dec-05
NULL	37.72	NULL	NULL	NULL	10-Jan-06
NULL	1.86	NULL	NULL	NULL	10-Feb-06
NULL	2.9	NULL	NULL	NULL	10-Mar-06
NULL	5.07	NULL	NULL	NULL	10-Apr-06
NULL	9.65	NULL	NULL	NULL	10-May-06
NULL	13.99	NULL	NULL	NULL	10-Jun-06
NULL	27.49	NULL	NULL	NULL	10-Jul-06
NULL	32.45	NULL	NULL	NULL	10-Aug-06
NULL	37.1	NULL	NULL	NULL	10-Sep-06
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NULL	48.43	NULL	NULL	NULL	10-Nov-06
NULL	55.33	NULL	NULL	NULL	10-Dec-06
NULL	60.29	NULL	NULL	NULL	10-Jan-07
NULL	2.48	NULL	NULL	NULL	10-Feb-07
NULL	3.81	NULL	NULL	NULL	10-Mar-07
NULL	5.91	NULL	NULL	NULL	10-Apr-07
NULL	6.47	NULL	NULL	NULL	10-May-07
NULL	9.67	NULL	NULL	NULL	10-Jun-07
NULL	20.09	NULL	NULL	NULL	10-Jul-07
NULL	23.15	NULL	NULL	NULL	10-Aug-07
NULL	26.21	NULL	NULL	NULL	10-Sep-07

**ATTACHMENT A**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**WATER QUALITY CRITERIA MONITORING**

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL <sup>(1)</sup>	REPORTING RESULTS	SAMPLE TYPE <sup>(2)</sup>	SAMPLE FREQUENCY
<b>METALS ug/l</b>						
7440-36-0	Antimony, dissolved	200.8	0.2	0.5	G or C	1/5 YR
7440-38-2	Arsenic, dissolved	200.8	60	<60	G or C	1/5 YR
7440-43-9	Cadmium, dissolved	200.8	0.1	<0.1	G or C	1/5 YR
16065-83-1	Chromium III, dissolved <sup>(8)</sup>	*	0.5	0.5	G or C	1/5 YR
18540-29-9	Chromium VI, dissolved <sup>(8)</sup>	*	0.5	0.5	G or C	1/5 YR
7440-50-8	Copper, dissolved	200.8	0.5	5.5	G or C	1/5 YR
7439-92-1	Lead, dissolved	200.8	0.5	<0.5	G or C	1/5 YR
7439-97-6	Mercury, dissolved	200.8	0.1	<0.1	G or C	1/5 YR
7440-02-0	Nickel, dissolved	200.8	0.5	1.2	G or C	1/5 YR
7782-49-2	Selenium, dissolved	200.8	1.0	<1.0	G or C	1/5 YR
7440-22-4	Silver, dissolved	200.8	0.2	<0.2	G or C	1/5 YR
7440-28-0	Thallium, dissolved	200.8	5	<5	G or C	1/5 YR
7440-66-6	Zinc, dissolved	200.8	2	74.2	G or C	1/5 YR
<b>PESTICIDES/PCB'S ug/l</b>						
309-00-2	Aldrin	608	0.05	<0.05	G or SC	1/5 YR
57-74-9	Chlordane	608	0.2	ND	G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	0.10	<0.10	G or SC	1/5 YR
72-54-8	DDD	608	0.05	<0.05	G or SC	1/5 YR
72-55-9	DDE	608	0.05	<0.05	G or SC	1/5 YR
50-29-3	DDT	608	0.05	<0.05	G or SC	1/5 YR
8065-48-3	Demeton	622	0.10	<0.10	G or SC	1/5 YR
60-57-1	Dieldrin	608	0.05	<0.05	G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.05	<0.05	G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.05	<0.05	G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.05	<0.05	G or SC	1/5 YR
72-20-8	Endrin	608	0.05	<0.05	G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL <sup>(1)</sup>	REPORTING RESULTS	SAMPLE TYPE <sup>(2)</sup>	SAMPLE FREQUENCY
7421-93-4	Endrin Aldehyde	608	0.05	<0.05	G or SC	1/5 YR
86-50-0	Guthion	622	0.10	<0.10	G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05	<0.05	G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	608	0.05	<0.05	G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	0.05	<0.05	G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	0.05	<0.05	G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	0.05	<0.05	G or SC	1/5 YR
143-50-0	Kepone	608	0.80	<0.80	G or SC	1/5 YR
121-75-5	Malathion	622	0.10	<0.10	G or SC	1/5 YR
72-43-5	Methoxychlor	608	0.05	<0.05	G or SC	1/5 YR
2385-85-5	Mirex	608	0.05	<0.05	G or SC	1/5 YR
56-38-2	Parathion	622	0.10	<0.10	G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0	ND	G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0	ND	G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0	ND	G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0	ND	G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0	ND	G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0	ND	G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0	ND	G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0	ND	G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0	ND	G or SC	1/5 YR

### BASE NEUTRAL EXTRACTABLES ug/l

83-32-9	Acenaphthene	625	10.0	<10.0	G or SC	1/5 YR
120-12-7	Anthracene	625	10.0	<10.0	G or SC	1/5 YR
92-87-5	Benzidine	625	10.0	<10.0	G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0	<10.0	G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0	<10.0	G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0	<10.0	G or SC	1/5 YR
50-32-8	Benzo (a) pyrene	625	10.0	<10.0	G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL <sup>(1)</sup>	REPORTING RESULTS	SAMPLE TYPE <sup>(2)</sup>	SAMPLE FREQUENCY
111-44-4	Bis 2-Chloroethyl Ether	625	10.0	<10.0	G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	625	10.0	<10.0	G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0	<10.0	G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	625	10.0	<10.0	G or SC	1/5 YR
218-01-9	Chrysene	625	10.0	<10.0	G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	10.0	<10.0	G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0	<10.0	G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0	<10.0	G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0	<10.0	G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0	<10.0	G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	625	10.0	<10.0	G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0	<10.0	G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0	<10.0	G or SC	1/5 YR
131-11-3	Dimethyl phthalate	625	10.0	<10.0	G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0	<10.0	G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	625	10.0	<10.0	G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0	<10.0	G or SC	1/5 YR
86-73-7	Fluorene	625	10.0	<10.0	G or SC	1/5 YR
118-74-1	Hexachlorobenzene	625	10.0	<10.0	G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	625	10.0	<10.0	G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	625	10.0	<10.0	G or SC	1/5 YR
67-72-1	Hexachloroethane	625	10.0	<10.0	G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	10.0	<10.0	G or SC	1/5 YR
78-59-1	Isophorone	625	10.0	<10.0	G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0	<10.0	G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	625	10.0	<10.0	G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	624	10.0	<10.0	G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	625	10.0	<10.0	G or SC	1/5 YR
129-00-0	Pyrene	625	10.0	<10.0	G or SC	1/5 YR
120-82-1	1,2,4-Trichlorobenzene	625	10.0	<10.0	G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL <sup>(1)</sup>	REPORTING RESULTS	SAMPLE TYPE <sup>(2)</sup>	SAMPLE FREQUENCY
<b>VOLATILES ug/l</b>						
107-02-8	Acrolein	624	10.0	<10.0	G	1/5 YR
107-13-1	Acrylonitrile	624	10.0	<10.0	G	1/5 YR
71-43-2	Benzene	624	10.0	<10.0	G	1/5 YR
75-25-2	Bromoform	624	10.0	<10.0	G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0	<10.0	G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	10.0	<10.0	G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0	<10.0	G	1/5 YR
67-66-3	Chloroform	624	10.0	<10.0	G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0	<10.0	G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0	<10.0	G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0	<10.0	G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0	<10.0	G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	624	10.0	<10.0	G	1/5 YR
78-87-5	1,2-Dichloropropane	624	10.0	<10.0	G	1/5 YR
542-75-6	1,3-Dichloropropene	624	20.0	<20.0	G	1/5 YR
100-41-4	Ethylbenzene	624	10.0	<10.0	G	1/5 YR
74-83-9	Methyl Bromide	624	10.0	<10.0	G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	624	10.0	<10.0	G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0	<10.0	G	1/5 YR
10-88-3	Toluene	624	10.0	<10.0	G	1/5 YR
79-00-5	1,1,2-Trichloroethane	624	10.0	<10.0	G	1/5 YR
79-01-6	Trichloroethylene	624	10.0	<10.0	G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0	<10.0	G	1/5 YR
<b>RADIONUCLIDES</b>						
	Strontium 90 (pCi/L)	EPA 905.0	2.00	ND	G or C	1/5 YR
	Tritium (pCi/L)	EPA 906.0	700	ND	G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr) (pCi/L)	EPA 900.0	4.00	8.62	G or C	1/5 YR
	Gross Alpha Particle Activity (pCi/L)	EPA 900.0	3.00	ND	G or C	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL <sup>(1)</sup>	REPORTING RESULTS	SAMPLE TYPE <sup>(2)</sup>	SAMPLE FREQUENCY
<b>ACID EXTRACTABLES<sup>(6)</sup> ug/l</b>						
95-57-8	2-Chlorophenol	625	10.0	<10.0	G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0	<10.0	G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0	<10.0	G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	625	10.0	<10.0	G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	625	10.0	<10.0	G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	10.0	<10.0	G or SC	1/5 YR
108-95-2	Phenol	625	10.0	<10.0	G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0	<10.0	G or SC	1/5 YR
<b>MISCELLANEOUS</b>						
	Ammonia as NH3-N			0.42	C	1/5 YR
16887-00-6	Chlorides mg/l	SM4500-C1 B	1	52	C	1/5 YR
7782-50-5	Chlorine, Total Residual			0.03	G	1/5 YR
57-12-5	Cyanide, Total			<10 ug/l	G	1/5 YR
N/A	<i>E. coli / Enterococcus</i> (N/CML)			6.4423	G	1/5 YR
7783-06-4	Hydrogen Sulfide mg/l	ASTM D 4658-03	0.1	<0.1	G or SC	1/5 YR
60-10-5	Tributyltin <sup>(7)</sup> ng/l	GC/FPD	30	ND	G or C	1/5 YR

Norm Risavi, County Administrator

Name of Principal Exec. Officer or Authorized Agent/Title

May 26, 2009

Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

#### FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

**Attachment G: MSTRANTI data source report, Mix.exe  
results, MSTRANTI, Facility effluent data evaluation and  
comments, Stats.exe results, 2004 effluent limitation  
development documents**

## MSTRANTI DATA SOURCE REPORT

<b>Stream information</b>	
Mean Hardness	Ambient water quality data (Station 3-TBS001.08)
90% Temperature (annual)	Ambient water quality data (Station 3-RUN001.39)
90% Temperature (wet season)	NA
90% Maximum pH	Ambient water quality data (Station 3-RUN001.39)
10% Maximum pH	Ambient water quality data (Station 3-RUN001.39)
Tier Designation	Tier Determination
<b>Stream Flows</b>	
All Data	Flow Frequency Memorandum
<b>Mixing Information</b>	
All Data	Mix.exe determination (30Q10) and standard 100% for 0.0 MGD low flow conditions (1Q10, 7Q10)
<b>Effluent Information</b>	
Mean Hardness	Effluent Data (from metals testing and historic data supplied by permittee)
90% Temperature (annual)	Application, max temperature reported was used (26.1°C)
90% Maximum pH	Calculated from DMR data (8.2 SU)
10% Maximum pH	Calculated from DMR data (7.7 SU)
Discharge flow	Design Flow (0.13 MGD)

Data Location:

Flow Frequency Memo – Attachment A

Mixing Zone Predictions for Montross-Westmoreland WWTP

Effluent Flow = 0.13 MGD  
Stream 7Q10 = 0.0001 MGD  
Stream 30Q10 = 0.016 MGD  
Stream 1Q10 = 0.0001 MGD  
Stream slope = 0.00038 ft/ft  
Stream width = 10 ft  
Bottom scale = 3  
Channel scale = 1

---

Mixing Zone Predictions @ 7Q10

Depth = .2171 ft  
Length = 331.52 ft  
Velocity = .0927 ft/sec  
Residence Time = .0414 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

---

Mixing Zone Predictions @ 30Q10

Depth = .233 ft  
Length = 311.87 ft  
Velocity = .097 ft/sec  
Residence Time = .0372 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

---

Mixing Zone Predictions @ 1Q10

Depth = .2171 ft  
Length = 331.52 ft  
Velocity = .0927 ft/sec  
Residence Time = .993 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

---

Virginia DEQ Mixing Zone Analysis Version 2.1

Note: The flow frequency analysis (Fact Sheet Attachment A) indicated 0.0 MGD flows for the 7Q10 and the 1Q10 low flows. A 30Q10 of 0.016 MGD was reported; therefore a mix analysis was performed to obtain the mix assumption for the 30Q10 flow. Low dummy values of 0.0001 MGD were entered for the 7Q10 and 1Q10 flows in order for the program to run and provide a mix assumption for the 30Q10 flow.

Per the stream sanitation memo the receiving stream is a swamp, therefore the estimated 0.00038 ft/ft slope (flat water) is appropriate. The stream width is an estimate based on information provided by the Plant Manager.

**FRESHWATER**  
**WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS**

Facility Name: Montross-Westmoreland

Permit No.: VA0072729

Receiving Stream: Ruin Branch

Version: OWP Guidance Memo 00-2011 (8/24/00)

**Stream Information**

Mean Hardness (as CaCO <sub>3</sub> ) =	12.4 mg/L
90% Temperature (Annual) =	25.7 deg C
90% Temperature (Wet season) =	NA deg C
90% Maximum pH =	6.8 SU
10% Maximum pH =	5.7 SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

**Stream Flows**

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0.016 MGD
1Q10 (Wet season) =	0.13 MGD
30Q10 (Wet season) =	0.38 MGD
30Q5 =	0.035 MGD
Harmonic Mean =	NA MGD

**Mixing Information**

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

**Effluent Information**

Mean Hardness (as CaCO <sub>3</sub> ) =	66 mg/L
90% Temp (Annual) =	26.1 deg C
90% Temp (Wet season) =	NA deg C
90% Maximum pH =	8.2 SU
10% Maximum pH =	7.7 SU
Discharge Flow =	0.13 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	5	--	--	na	9.9E+02	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.2E+01	--	--	--	--	--	--	--	--	--	--	na	1.2E+01
Acrylonitrile <sup>c</sup>	0	--	--	na	2.5E+00	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Aldrin <sup>c</sup>	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	#VALUE!	--	--	--	--	--	--	--	--	3.0E+00	--	na	#VALUE!
Ammonia-N (mg/l) (Yearly)	0	5.73E+00	1.82E+00	na	--	5.73E+00	2.04E+00	na	--	--	--	--	--	--	--	--	--	5.73E+00	2.04E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	3.34E+01	#VALUE!	na	--	6.68E+01	#VALUE!	na	--	--	--	--	--	--	--	--	--	6.68E+01	#VALUE!	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	5.1E+04	--	--	--	--	--	--	--	--	--	--	na	5.1E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene <sup>c</sup>	0	--	--	na	5.1E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Benzidine <sup>c</sup>	0	--	--	na	2.0E-03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Benzo (a) anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Benzo (b) fluoranthene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Benzo (k) fluoranthene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Benzo (a) pyrene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Bis2-Chloroethyl Ether <sup>c</sup>	0	--	--	na	5.3E+00	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	8.3E+04	--	--	--	--	--	--	--	--	--	--	na	8.3E+04
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	--	--	na	2.2E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Bromoform <sup>c</sup>	0	--	--	na	1.4E+03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.4E+03	--	--	--	--	--	--	--	--	--	--	na	2.4E+03
Cadmium	0	2.5E+00	8.2E-01	na	--	2.5E+00	8.2E-01	na	--	--	--	--	--	--	--	--	--	2.5E+00	8.2E-01	na	--
Carbon Tetrachloride <sup>c</sup>	0	--	--	na	1.6E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	#VALUE!	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	#VALUE!
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	2.0E+03	--	--	--	--	--	--	--	--	--	--	na	2.0E+03

Parameter (ug/l unless noted)	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations					
		Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Chlorodibromomethane <sup>c</sup>	0	--	--	--	na	1.3E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Chloroform	0	--	--	--	na	1.1E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Chloronaphthalene	0	--	--	--	na	1.6E+03	--	--	na	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	na	2.0E+03
2-Chlorophenol	0	--	--	--	na	1.5E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--	
Chromium III	0	4.1E+02	5.3E+01	na	--	4.1E+02	5.3E+01	na	--	--	--	--	--	--	--	--	--	--	4.1E+02	5.3E+01	na	--	
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--	
Chromium, Total	0	--	--	1.0E+02	--	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>c</sup>	0	--	--	--	na	1.8E-02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Copper	0	9.1E+00	6.3E+00	na	--	9.1E+00	6.3E+00	na	--	--	--	--	--	--	--	--	--	--	9.1E+00	6.3E+00	na	--	
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	2.0E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.0E+04		
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	#VALUE!	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	#VALUE!		
Demeton	0	--	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--	
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--		
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Dichlorobromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	9.0E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	9.0E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
2,4-Dichlorophenoxyacetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
1,3-Dichloropropene <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Dieldrin <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	#VALUE!	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	#VALUE!		
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	5.6E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	5.6E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	na	1.4E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	6.7E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	6.7E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.6E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	3.6E+02
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	3.4E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	6.5E-08	--	--	--	--	--	--	--	--	--	--	--	--	na	6.5E-08
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	2.0E+00	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+02		
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.1E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.1E+02		
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--		
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	--	na	1.1E+02	
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	7.6E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	7.6E-02		
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.8E-01	--	--	--	--	--	--	--	--	--	--	--	na	3.8E-01	

Parameter (ug/l unless noted)	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				
		Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	--	na	2.1E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Fluoranthene	0	--	--	--	na	1.4E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Fluorene	0	--	--	--	na	5.3E+03	--	--	na	6.7E+03	--	--	--	--	--	--	--	--	--	--	na	6.7E+03
Foaming Agents	0	--	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor C	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	#VALUE!	--	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	#VALUE!
Heptachlor Epoxide C	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	#VALUE!	--	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	#VALUE!
Hexachlorobenzene C	0	--	--	na	2.9E-03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Hexachlorobutadiene C	0	--	--	na	1.8E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Hexachlorocyclohexane																						
Alpha-BHC C	0	--	--	na	4.9E-02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Hexachlorocyclohexane																						
Beta-BHC C	0	--	--	na	1.7E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Hexachlorocyclohexane																						
Gamma-BHC C (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	#VALUE!	--	--	--	--	--	--	--	--	9.5E-01	--	na	#VALUE!	
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03	
Hexachloroethane C	0	--	--	na	3.3E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--	
Indeno (1,2,3-cd) pyrene C	0	--	--	na	1.8E-01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone C	0	--	--	na	9.6E+03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--	
Lead	0	7.0E+01	8.0E+00	na	--	7.0E+01	8.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+01	8.0E+00	na	--	
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--	
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--	
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03	
Methylene Chloride C	0	--	--	na	5.9E+03	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--	
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	0.0E+00	na	--		
Nickel	0	1.3E+02	1.4E+01	na	4.6E+03	1.3E+02	1.4E+01	na	5.8E+03	--	--	--	--	--	--	--	--	1.3E+02	1.4E+01	na	5.8E+03	
Nitrate (as N)	0	--	--	na	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--	
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	8.8E+02	--	--	--	--	--	--	--	--	--	--	na	8.8E+02	
N-Nitrosodimethylamine C	0	--	--	na	3.0E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
N-Nitrosodiphenylamine C	0	--	--	na	6.0E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
N-Nitrosodi-n-propylamine C	0	--	--	na	5.1E+00	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--	
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--	
PCB Total C	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	#VALUE!	--	--	--	--	--	--	--	--	--	1.4E-02	na	#VALUE!	
Pentachlorophenol C	0	1.8E+01	1.4E+01	na	3.0E+01	1.8E+01	1.4E+01	na	#VALUE!	--	--	--	--	--	--	--	--	1.8E+01	1.4E+01	na	#VALUE!	
Phenol	0	--	--	na	8.6E+05	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06	
Pyrene	0	--	--	na	4.0E+03	--	--	na	5.1E+03	--	--	--	--	--	--	--	--	--	--	na	5.1E+03	
Radionuclides Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	5.1E+00	
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	

Parameter (ug/l unless noted)	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				
		Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	5.3E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	5.3E+03	
Silver	0	1.7E+00	--	na	--	1.7E+00	--	na	--	--	--	--	--	--	--	--	--	1.7E+00	--	na	--	
Sulfate	0	--	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	na	--	
1,1,2,2-Tetrachloroethane <sup>C</sup>	0	--	--	--	na	4.0E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Tetrachloroethylene <sup>C</sup>	0	--	--	--	na	3.3E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!
Thallium	0	--	--	--	na	4.7E-01	--	--	na	6.0E-01	--	--	--	--	--	--	--	--	--	--	na	6.0E-01
Toluene	0	--	--	--	na	6.0E+03	--	--	na	7.6E+03	--	--	--	--	--	--	--	--	--	--	na	7.6E+03
Total dissolved solids	0	--	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene <sup>C</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	#VALUE!	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	#VALUE!	
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--	
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01	
1,1,2-Trichloroethane <sup>C</sup>	0	--	--	na	1.6E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
Trichloroethylene <sup>C</sup>	0	--	--	na	3.0E+02	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
2,4,6-Trichlorophenol <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--	
Vinyl Chloride <sup>C</sup>	0	--	--	na	2.4E+01	--	--	na	#VALUE!	--	--	--	--	--	--	--	--	--	--	na	#VALUE!	
Zinc	0	8.2E+01	8.3E+01	na	2.6E+04	8.2E+01	8.3E+01	na	3.3E+04	--	--	--	--	--	--	--	--	8.2E+01	8.3E+01	na	3.3E+04	

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipalities
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	8.1E+02
Arsenic	9.0E+01
Barium	na
Cadmium	4.9E-01
Chromium III	3.2E+01
Chromium VI	6.4E+00
Copper	3.6E+00
Iron	na
Lead	4.8E+00
Manganese	na
Mercury	4.6E-01
Nickel	8.6E+00
Selenium	3.0E+00
Silver	6.8E-01
Zinc	3.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

### **Montross - Westmoreland Facility Effluent Data Evaluation and Comments**

The following is a summary of the evaluation of data reported in the facility's application (Form 2A and Water Quality Criteria Monitoring. A reasonable potential analysis was performed if necessary; Stats.exe results are given in **Attachment G**.

<b>Water Quality Criteria Monitoring Reported with the Application</b>			
<b>PARAMETER</b>	<b>EFFLUENT CONCENTRATIONS</b>	<b>QUANTIFICATION LEVEL</b>	<b>COMMENTS</b>
Dissolved Antimony	0.5 µg/L	0.2 µg/L	No aquatic life WQS for this parameter; effluent concentration is less than SSTV (810 µg/L) and is not expected to cause a WQS violation.
Dissolved Arsenic	<60 µg/L	60 µg/L	Reasonable potential analysis performed; no limit necessary.
Dissolved Cadmium	<0.1 µg/L	0.1 µg/L	Considered absent.
Total Chromium	0.5 µg/L	0.5 µg/L	Reasonable potential analysis performed, using WLA for Cr VI (no standard for total chromium); no limit necessary.
Dissolved Chromium III (measured as Total Chromium)	0.5 µg/L	0.5 µg/L	Data is less than SSTV of 32 µg/L, no limit required.
Dissolved Chromium VI (measured as Total Chromium)	0.5 µg/L	0.5 µg/L	Data is less than SSTV of 6.4 µg/L, no limit required.
Dissolved Copper	5.5 µg/L	0.5 µg/L	Dissolved data evaluated, limit required, determined to be 9.1 µg/L monthly average and weekly average. However, limit of 7.3 µg/L retained from 2004 permit due to antibacksliding.
Dissolved Lead	<0.5 µg/L	0.5 µg/L	Considered absent.
Dissolved Mercury	<0.1 µg/L	0.1 µg/L	Considered absent.
Dissolved Nickel	1.2 µg/L	0.5 µg/L	Reasonable potential analysis performed,

Water Quality Criteria Monitoring Reported with the Application			
PARAMETER	EFFLUENT CONCENTRATIONS	QUANTIFICATION LEVEL	COMMENTS
			no limit required.
Dissolved Selenium	<1.0 µg/L	1.0 µg/L	Considered absent.
Total Recoverable Selenium	<1.0 µg/L	1.0 µg/L	Considered absent.
Dissolved silver	<0.2 µg/L	0.2 µg/L	Considered absent.
Dissolved Thallium	<5 µg/L	5 µg/L	Considered absent.
Dissolved Zinc	74.2 µg/L	2 µg/L	Reasonable potential analysis performed; limit required and determined to be 82 µg/L monthly average and weekly average. However, limit of 68 µg/L retained from 2004 permit due to antibacksliding backsliding.
Carbonaceous Biochemical Oxygen Demand	41.6 mg/L max daily; 2.75 mg/L average daily – Form 2A	2 mg/L	Existing Limit of 10 mg/l will be maintained.
E. coli	194. 6 N/CmL Max DMR geometric mean 2008-2010	1 N/CmL	Existing Limit of 126 N/CmL will be maintained. The facility exceeded the limitation only once in the complete three year period (2008-2010) and the facility is not thought to be contributing to a bacterial impairment.
Fecal Coliform	<2, <2, <2 N/100mL	2.0 N/100mL	Fecal coliform limitation of 200 N/100mL imposed due to Bacteria TMDL.
Ammonia	0.42, 0.81, 0.16 mg/L (WQ Monitoring Form)	0.20 mg/L (0.01 mg/L for the third sample)	Ammonia limitation forced per GM 00-2011. An average monthly limit was determined to be 2.24 mg/L and a weekly average was determined to be 3.01 mg/L. However, the 3.00 mg/L TKN limit is expected to be protective of ammonia; no

Water Quality Criteria Monitoring Reported with the Application			
PARAMETER	EFFLUENT CONCENTRATIONS	QUANTIFICATION LEVEL	COMMENTS
			ammonia limitation imposed in the permit.
Total Suspended Solids	6.57 mg/L max daily; 2.20 mg/L avg daily - Form 2A	<1 mg/L	Existing Limit of 10 mg/L will be maintained
Temperature—winter (max)	10.3 deg C	NA	Form 2A
Temperature—summer (max)	26.1 deg C	NA	Form 2A--Input to MSTRANTI
pH	8.2 S.U. 90 <sup>th</sup> percentile of maximum	NA	Calculated using DMR data. Data evaluated, water quality limits applied (6.0-9.0 SU).
Dissolved Oxygen	12.31 mg/L max daily; 8.79 mg/L average daily (Form 2A)	NA	D.O. limit of 5.0 mg/L daily minimum in 2011 permit (carried forward from 2004 permit).
TKN	40.5 mg/L max daily; 3.41 mg/L avg daily	0.5 mg/L	Permit limit of 3.0 mg/L to be maintained. Facility was under a LOA in 2009 to correct TKN and metals violations. CTO for upgrades to plant issue in 2010. Permittee presently in compliance with TKN limit.
Nitrate plus Nitrite - N	13.2 mg/L max daily; 3.48 mg/L average daily	0.5 mg/L	Form 2A; TN loading controlled via the Watershed General Permit.
Total Phosphorus	4.24 mg/l max daily; 0.67 mg/l average daily	0.5 mg/L	Form 2A; TP loading controlled via the Watershed General Permit. 2.0 mg/L monthly average limitation carried forward from 2004 permit.
TDS	540 mg/L max daily; 493	10.0 mg/L	Form 2A

**Water Quality Criteria Monitoring Reported with the Application**

PARAMETER	EFFLUENT CONCENTRATIONS	QUANTIFICATION LEVEL	COMMENTS
	mg/L average daily		
Chloride	52 mg/L - Attach. A.	1.0 mg/L	Reasonable potential evaluation performed; no limit required.
Total Residual Chlorine	0.03, 0.14 mg/L	0.10 mg/L	Reasonable potential evaluation performed, limit required, determined to be 16 µg/L monthly average and weekly average
Oil and Grease	< 5.0 mg/L	5.0 mg/L	Considered absent.
Total Cyanide	<10.0 µg/L	10.0 µg/L	Considered absent.
Hydrogen Sulfide	<0.1 mg/L	0.1 mg/L	Considered absent.
Tributyltin	Non-detectable	30 ng/L	Considered absent.
Nonylphenol	<10.0 µg/L	10.0 µg/L	Considered absent
Gross Alpha Particle Activity	Non-detectable	3.00 pCi/L	Data evaluated; no limit required**
Beta Particle and Photon Activity	8.62 pCi/L	4.00 pCi/L	Data evaluated; no limit required**
Tritium	Non-detectable	700 pCi/L	Data evaluated; no limit required**
Strontium	Non-detectable	2.0 pCi/L	Data evaluated; no limit required**

"SSTV" = Site Specific Target Value

SSTVs are calculated by MSTRANTI based on effluent characteristics and receiving stream conditions. SSTVs represent a target value for metals, below which an effluent concentration of that parameter is not expected to exceed the calculated wasteload allocations or generate the need for a permit limitation.

\*Note: All data reported on the Water Quality Criteria Monitoring form was evaluated. Parameters that were reported as less than the Agency QL were considered absent for the purpose of this evaluation and a limitation was not deemed necessary. Pesticides/PCB's, Base Neutral Extractables, Volatiles, and Acid Extractables were all reported as less than the required QL. No further analysis is necessary for these parameters.

\*\*A Human Health evaluation of the reported Radionuclides is included in Item 16 of the fact sheet. There are no aquatic life WQS for these parameters.

## Stats.exe Results

Facility = Montross- Westmoreland Chemical = Chloride Chronic averaging period = 4 WLAA = 860 WLAC = 230 Q.L. = 10 # samples/mo. = 1 # samples/wk. = 1	Facility = Montross- Westmoreland Chemical = Dissolved Copper Chronic averaging period = 4 WLAA = 9.1 WLAC = 6.3 Q.L. = 3.0 # samples/mo. = 1 # samples/wk. = 1
Summary of Statistics:	Summary of Statistics:
# observations = 1 Expected Value = 52 Variance = 973.44 C.V. = 0.6 97th percentile daily values = 126.537 97th percentile 4 day average = 86.5170 97th percentile 30 day average= 62.7147 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data	# observations = 1 Expected Value = 5.5 Variance = 10.89 C.V. = 0.6 97th percentile daily values = 13.3837 97th percentile 4 day average = 9.15084 97th percentile 30 day average= 6.63329 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data
No Limit is required for this material	A limit is needed based on Acute Toxicity Maximum Daily Limit = 9.1 Average Weekly limit = 9.1 Average Monthly Limit = 9.1
The data are:  52 mg/l	The data are:  5.5 µg/l  This limit is less stringent than the 2004 permit limit of 7.3 µg/l; therefore due to antibacksliding the 2004 permit limit will be carried forward.

Facility = Montross- Westmoreland	Facility = Montross- Westmoreland
Chemical = Zinc	Chemical = Nickel, dissolved
Chronic averaging period = 4	Chronic averaging period = 4
WLAa = 82	WLAa = 130
WLAc = 83	WLAc = 14
Q.L. = 2	Q.L. = 0.5
# samples/mo. = 1	# samples/mo. = 1
# samples/wk. = 1	# samples/wk. = 1
Summary of Statistics:	Summary of Statistics:
# observations = 1	# observations = 1
Expected Value = 74.2	Expected Value = 1.2
Variance = 1982.03	Variance = .5184
C.V. = 0.6	C.V. = 0.6
97th percentile daily values = 180.559	97th percentile daily values = 2.92010
97th percentile 4 day average = 123.453	97th percentile 4 day average = 1.99654
97th percentile 30 day average= 89.4891	97th percentile 30 day average= 1.44726
# < Q.L. = 0	# < Q.L. = 0
Model used = BPJ Assumptions, type 2 data	Model used = BPJ Assumptions, type 2 data
A limit is needed based on Acute Toxicity	No Limit is required for this material
Maximum Daily Limit = 82	
Average Weekly limit = 82	
Average Monthly Limit = 82	
The data are:	The data are:
74.2 µg/l	1.2 µg/l
This limit is less stringent than the 2004 permit limit of 68 µg/l; therefore due to antibacksliding the 2004 permit limit will be carried forward.	

<p>Facility = Montross- Westmoreland  Chemical = Ammonia  Chronic averaging period = 30  WLAa = 5.73  WLAc = 2.04  Q.L. = 0.2  # samples/mo. = 12  # samples/wk. = 3</p>	<p>Facility = Montross- Westmoreland  Chemical = Ammonia  Chronic averaging period = 30  WLAa = 5.73  WLAc = 2.04  Q.L. = 0.2  # samples/mo. = 12  # samples/wk. = 3</p>
<p>Summary of Statistics:</p>	<p>Summary of Statistics:</p>
<p># observations = 1  Expected Value = 9  Variance = 29.16  C.V. = 0.6  97th percentile daily values = 21.9007  97th percentile 4 day average = 14.9741  97th percentile 30 day average= 10.8544  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p>	<p># observations = 1  Expected Value = 3  Variance = 3.24  C.V. = 0.6  97th percentile daily values = 7.30025  97th percentile 4 day average = 4.99137  97th percentile 30 day average= 3.61815  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p>
<p>A limit is needed based on Chronic Toxicity  Maximum Daily Limit = 4.11604699056927  Average Weekly limit = 3.01065663983344  Average Monthly LImit = 2.24254568992323</p>	<p>A limit is needed based on Chronic Toxicity  Maximum Daily Limit = 4.11604699056927  Average Weekly limit = 3.01065663983344  Average Monthly LImit = 2.24254568992323</p>
<p>The data are:</p>	<p>The data are:</p>
<p>9.00 mg/l</p>	<p>3.00 mg/l</p>
<p>Per GM 00-2011 a datum of 9.00 mg/L was used to force an ammonia limitation. See discussion to the right.</p>	<p>Note: As ammonia is a component of TKN (40-60%) and the TKN limitation is 3.0 mg/l, the ammonia discharged cannot exceed 3.0 mg/l because of the presence of the TKN limitation. Therefore, 3.00 mg/l was used to derive an ammonia limitation. A limitation results from the statistical analysis, however, the TKN limit of 3.00 mg/l is protective of ammonia concentrations above 1.80 mg/L. For this reason the TKN limitation is more stringent than the ammonia limitation; therefore, an ammonia limitation is not included in the 2011 permit.</p>

<p>Facility = Montross- Westmoreland  Chemical = Chromium VI  Chronic averaging period = 4  WLAa = 16  WLAc = 11  Q.L. = 0.5  # samples/mo. = 1  # samples/wk. = 1</p> <p><b>Summary of Statistics:</b></p> <p># observations = 1  Expected Value = .5  Variance = .09  C.V. = 0.6  97th percentile daily values = 1.21670  97th percentile 4 day average = .831895  97th percentile 30 day average= .603026  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are:  0.5 µg/l</p> <p>Note: The input value is in terms of total chromium; 0.5 µg/l total chromium was reported on the application. Hexavalent chromium and trivalent chromium collectively constitute total chromium. The WLAs (a/c) used in Stats.exe are for Chromium VI. The WLAs for Chromium VI are more stringent than those for Chromium II; therefore, a 0.5 µg/l datum will not generate a limit using the Chromium III WLAs.</p>	<p>Facility = Montross- Westmoreland  Chemical = Arsenic, dissolved  Chronic averaging period = 4  WLAa = 340  WLAc = 150  Q.L. = 1.0  # samples/mo. = 1  # samples/wk. = 1</p> <p><b>Summary of Statistics:</b></p> <p># observations = 1  Expected Value = 60  Variance = 1296  C.V. = 0.6  97th percentile daily values = 146.005  97th percentile 4 day average = 99.8274  97th percentile 30 day average= 72.3631  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are:  60 µg/l</p> <p>A reasonable potential analysis was performed for arsenic due to the QL of 60 µg/l, which is greater than the present Agency QL of 1.0 µg/l. The parameter was reported as less than 60 µg/l but was treated as equal to the QL for this evaluation. No limit is necessary.</p>
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<p>Facility = Montross-Westmoreland  Chemical = TRC (Toxic parameter)  Chronic averaging period = 4  WLAa = 19  WLAc = 11  Q.L. = 1  # samples/mo. = 1  # samples/wk. = 1</p>	<p>Facility = Montross- Westmoreland  Chemical = TRC  Chronic averaging period = 4  WLAa = 19  WLAc = 11  Q.L. = 100  # samples/mo. = 90  # samples/wk. = 21</p>
<p>Summary of Statistics:</p> <p># observations = 2  Expected Value = 85  Variance = 2601  C.V. = 0.6  97th percentile daily values = 206.840  97th percentile 4 day average = 141.422  97th percentile 30 day average= 102.514  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p>	<p>Summary of Statistics:</p> <p># observations = 1  Expected Value = 20000  Variance = 1440000  C.V. = 0.6  97th percentile daily values = 48668.3  97th percentile 4 day average = 33275.8  97th percentile 30 day average= 24121.0  # &lt; Q.L. = 0  Model used = BPJ Assumptions, type 2 data</p>
<p>A limit is needed based on Chronic Toxicity  Maximum Daily Limit = 16.0883226245855  Average Weekly limit = 16.0883226245855  Average Monthly Llimit = 16.0883226245855</p>	<p>A limit is needed based on Chronic Toxicity  Maximum Daily Limit = 16.0883226245855  Average Weekly limit = 8.37736286379464  Average Monthly Limit = 7.39793639872119</p>
<p>The data are:</p> <p>30 µg/L  140 µg/L</p> <p>A quantifiable concentration of 30 µg/L TRC was reported on the permit application. The effluent was subsequently retested for this parameter on 5.5.11 during the site visit, yielding a value of 140 µg/L. These data points generate a water quality based limit to protect against chronic toxicity. This is a new limitation and a four year schedule of compliance is afforded per Permit Part I.B.</p>	<p>The data are:</p> <p>20,000 µg/L</p> <p>Per GM-00-2011 a datum of 20,000 µg/L is utilized to force a TRC limitation. These limitations are found in Part I.C. of the permit are effective only if chlorination is chosen as the disinfection method as an alternative to UV disinfection.</p>

# 2004 Permit MSTRANT

## FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Morris Westholme WWTP  
 Receiving Stream: Run Branch of Cat Point Creek

Permit No.: AA0072729

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows				Mixing Information				Effluent Information			
Mean Hardness (as CaCO <sub>3</sub> ) =	20.7 mg/L	1Q10 (Annual) =	0 MGD	100 %		Mean Hardness (as CaCO <sub>3</sub> ) =	52.7 mg/L			90% Temp (Annual) =	22.7 deg C		
90% Temperature (Annual) =	23.2 deg C	7Q10 (Annual) =	0 MGD	100 %		90% Temp (Wet season) =	10.6 deg C			90% Maximum pH =	7.77 SU		
90% Temperature (Wet season) =	13.5 deg C	30Q10 (Annual) =	0.02 MGD	100 %		90% Maximum pH =	7.45 SU			10% Maximum pH =			
90% Maximum pH =	6.38 SU	1Q10 (Wet season) =	0.16 MGD	100 %		10% Maximum pH =				Discharge Flow =	0.13 MGD		
10% Maximum pH =	5.46 SU	30Q10 (Wet season) =	0.47 MGD	100 %									
Tier Designation (1 or 2) =	1	30Q5 =	0.07 MGD										
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD										
Trout Present Y/N? =	n	Annual Average =	n/a MGD										
Early Life Stages Present Y/N? =	y												

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Most Limiting Allocations			
		Acute	Chronic	HH (PWMS)	HH	Acute	Chronic	HH (PWMS)	HH	Acute	Chronic	HH (PWMS)	HH	Acute	Chronic	HH (PWMS)	HH
Acenaphthene	0	-	-	na	2.7E+03	-	-	na	4.2E+03	-	-	-	-	-	-	-	4.2E+03
Acrolein	0	-	-	na	7.8E+02	-	-	na	1.2E+03	-	-	-	-	-	-	-	1.2E+03
Acrylonitrile <sup>c</sup>	0	-	-	na	6.6E+00	-	-	na	6.6E+00	-	-	-	-	-	-	-	6.6E+00
Aldrin <sup>c</sup>	0	3.0E+00	-	na	1.4E-03	3.0E+00	-	na	1.4E-03	-	-	-	-	3.0E+00	-	-	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.28E+01	3.25E+00	na	-	1.3E+01	3.7E+00	na	-	-	-	-	-	1.3E+01	3.7E+00	na	-
Ammonia-N (mg/l) (High Flow)	0	1.28E+01	6.68E+00	na	-	2.9E+01	3.1E+01	na	-	-	-	-	-	2.9E+01	3.1E+01	na	-
Anthracene	0	-	-	na	1.1E+05	-	-	na	1.7E+05	-	-	-	-	-	-	-	1.7E+05
Antimony	0	-	-	na	4.3E+03	-	-	na	6.6E+03	-	-	-	-	-	-	-	6.6E+03
Arsenic	0	3.4E+02	1.5E+02	na	-	3.4E+02	1.5E+02	na	-	-	-	-	-	3.4E+02	1.5E+02	na	-
Barium	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	na
Benzene <sup>c</sup>	0	-	-	na	7.1E+02	-	-	na	7.1E+02	-	-	-	-	-	-	-	7.1E+02
Benzidine <sup>c</sup>	0	-	-	na	5.4E-03	-	-	na	5.4E-03	-	-	-	-	-	-	-	5.4E-03
Benzo (a) anthracene <sup>c</sup>	0	-	-	na	4.9E-01	-	-	na	4.9E-01	-	-	-	-	-	-	-	4.9E-01
Benzo (b) fluoranthene <sup>c</sup>	0	-	-	na	4.9E-01	-	-	na	4.9E-01	-	-	-	-	-	-	-	4.9E-01
Benzo (k) fluoranthene <sup>c</sup>	0	-	-	na	3.6E+03	-	-	na	3.6E+03	-	-	-	-	-	-	-	1
Benzo (a) pyrene <sup>c</sup>	0	-	-	na	4.9E-01	-	-	na	4.9E-01	-	-	-	-	-	-	-	4.9E-01
Bis2-Chloroethyl Ether	0	-	-	na	1.4E+01	-	-	na	2.2E+01	-	-	-	-	-	-	-	2.2E+01
Bis2-Chloroisopropyl Ether	0	-	-	na	1.7E+05	-	-	na	2.6E+05	-	-	-	-	-	-	-	2.6E+05
Bromiform <sup>c</sup>	0	-	-	na	3.6E+03	-	-	na	3.6E+03	-	-	-	-	-	-	-	3.6E+03
Butylbenzylphthalate	0	-	-	na	5.2E+03	-	-	na	8.0E+03	-	-	-	-	-	-	-	8.0E+03
Cadmium	0	1.9E+00	6.9E-01	na	-	1.9E+00	6.9E-01	na	-	-	-	-	-	1.9E+00	6.9E-01	na	-
Carbon Tetrachloride <sup>c</sup>	0	-	-	na	4.4E+01	-	-	na	4.4E+01	-	-	-	-	-	-	-	4.4E+01
Chlordane <sup>c</sup>	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	-	-	-	-	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	-	8.6E+05	2.3E+05	na	-	-	-	-	-	8.6E+05	2.3E+05	na	-
TRC	0	1.9E+01	1.1E+01	na	-	1.9E+01	1.1E+01	na	-	-	-	-	-	1.9E+01	1.1E+01	na	-
Chlorobenzene	0	-	-	na	2.1E+04	-	-	na	3.2E+04	-	-	-	-	-	-	-	3.2E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria						Wastewater Allocations						Antidegradation Allocations						Most Limiting Allocations						
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Chlorobromomethane <sup>c</sup>	0	-	-	na	3.4E+02	-	-	na	3.4E+02	-	-	na	3.4E+02	-	-	-	-	-	-	na	3.4E+02	-	-	na	2.9E+04	
Chloroform <sup>c</sup>	0	-	-	na	2.9E+04	-	-	na	4.3E+03	-	-	na	2.9E+04	-	-	-	-	-	-	na	4.3E+03	-	-	na	4.0E+02	
2-Chlorophthalene	0	-	-	na	4.3E+03	-	-	na	4.0E+02	-	-	na	4.0E+02	-	-	-	-	-	-	na	4.0E+02	-	-	na	4.0E+02	
2-Chlorophenol	0	-	-	na	4.1E+02	-	-	na	8.3E+02	4.1E+02	na	-	8.3E+02	4.1E+02	na	-	-	-	-	na	8.3E+02	4.1E+02	na	na	4.0E+02	
Chlorpyrifos	0	-	-	na	4.4E+01	-	-	na	3.4E+02	4.4E+01	na	-	3.4E+02	4.4E+01	na	-	-	-	-	na	3.4E+02	4.4E+01	na	na	4.0E+02	
Chromium III	0	-	-	na	1.1E+01	-	-	na	1.6E+01	1.1E+01	na	-	1.6E+01	1.1E+01	na	-	-	-	-	na	1.6E+01	1.1E+01	na	na	4.0E+02	
Chromium VI	0	-	-	na	5.2E+00	-	-	na	7.3E+00	5.2E+00	na	-	7.3E+00	5.2E+00	na	-	-	-	-	na	7.3E+00	5.2E+00	na	na	4.0E+02	
Chromium, Total	0	-	-	na	4.9E+01	-	-	na	4.9E+01	-	-	na	4.9E+01	-	-	-	-	-	-	na	4.9E+01	-	-	na	4.9E+01	
Chrysene <sup>c</sup>	0	-	-	na	1.6E+01	-	-	na	1.6E+01	1.1E+01	na	-	1.6E+01	1.1E+01	na	-	-	-	-	na	1.6E+01	1.1E+01	na	na	4.0E+02	
Copper	0	-	-	na	2.2E+00	-	-	na	2.2E+00	5.2E+00	na	-	2.2E+00	5.2E+00	na	-	-	-	-	na	2.2E+00	5.2E+00	na	na	2.2E+00	
Cyanide	0	-	-	na	8.4E+03	-	-	na	8.4E+03	-	-	na	8.4E+03	-	-	-	-	-	-	na	8.4E+03	-	-	na	8.4E+03	
DDD <sup>c</sup>	0	-	-	na	5.9E+03	-	-	na	5.9E+03	-	-	na	5.9E+03	-	-	-	-	-	-	na	5.9E+03	-	-	na	5.9E+03	
DDE <sup>c</sup>	0	-	-	na	1.1E+00	-	-	na	5.9E+03	1.1E+00	1.0E+03	na	5.9E+03	1.1E+00	1.0E+03	na	-	-	-	-	na	5.9E+03	1.1E+00	1.0E+03	na	5.9E+03
DDT <sup>c</sup>	0	-	-	na	1.0E+01	-	-	na	4.9E+01	-	-	na	4.9E+01	-	-	-	-	-	-	na	4.9E+01	-	-	na	4.9E+01	
Demeton	0	-	-	na	1.0E+01	-	-	na	1.2E+04	-	-	na	1.2E+04	-	-	-	-	-	-	na	1.2E+04	-	-	na	1.2E+04	
Dibenz(a,h)anthracene <sup>c</sup>	0	-	-	na	1.0E+01	-	-	na	1.0E+01	-	-	na	1.0E+01	-	-	-	-	-	-	na	1.0E+01	-	-	na	1.0E+01	
Diethyl phthalate	0	-	-	na	5.2E+00	-	-	na	5.2E+00	-	-	na	5.2E+00	-	-	-	-	-	-	na	5.2E+00	-	-	na	5.2E+00	
Dichloromethane	(Methylene Chloride) <sup>c</sup>	0	-	na	1.6E+04	-	-	na	1.6E+04	-	-	na	1.6E+04	-	-	-	-	-	-	na	1.6E+04	-	-	na	1.6E+04	
1,2-Dichlorobenzene	0	-	-	na	1.7E+04	-	-	na	1.7E+04	-	-	na	1.7E+04	-	-	-	-	-	-	na	1.7E+04	-	-	na	1.7E+04	
1,3-Dichlorobenzene	0	-	-	na	2.6E+03	-	-	na	2.6E+03	-	-	na	2.6E+03	-	-	-	-	-	-	na	2.6E+03	-	-	na	2.6E+03	
1,4-Dichlorobenzene	0	-	-	na	2.6E+03	-	-	na	2.6E+03	-	-	na	2.6E+03	-	-	-	-	-	-	na	2.6E+03	-	-	na	2.6E+03	
3,3-Dichlorobenzidine <sup>c</sup>	0	-	-	na	7.7E+01	-	-	na	7.7E+01	-	-	na	7.7E+01	-	-	-	-	-	-	na	7.7E+01	-	-	na	7.7E+01	
Dichlorobromomethane <sup>c</sup>	0	-	-	na	4.6E+02	-	-	na	4.6E+02	-	-	na	4.6E+02	-	-	-	-	-	-	na	4.6E+02	-	-	na	4.6E+02	
1,2-Dichloroethane <sup>c</sup>	0	-	-	na	9.9E+02	-	-	na	9.9E+02	-	-	na	9.9E+02	-	-	-	-	-	-	na	9.9E+02	-	-	na	9.9E+02	
1,1-Dichloroethylene	0	-	-	na	1.7E+04	-	-	na	1.7E+04	-	-	na	1.7E+04	-	-	-	-	-	-	na	1.7E+04	-	-	na	1.7E+04	
1,2-trans-dichloroethylene	0	-	-	na	1.4E+05	-	-	na	1.4E+05	-	-	na	1.4E+05	-	-	-	-	-	-	na	1.4E+05	-	-	na	1.4E+05	
2,4-Dichlorophenol	0	-	-	na	7.9E+02	-	-	na	7.9E+02	-	-	na	7.9E+02	-	-	-	-	-	-	na	7.9E+02	-	-	na	7.9E+02	
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	-	-	na	-	-	-	na	3.9E+02	-	-	na	3.9E+02	-	-	-	-	-	-	na	3.9E+02	-	-	na	3.9E+02	
1,2-Dichloropropane <sup>c</sup>	0	-	-	na	1.7E+03	-	-	na	1.7E+03	-	-	na	1.7E+03	-	-	-	-	-	-	na	1.7E+03	-	-	na	1.7E+03	
Dieldrin <sup>c</sup>	0	-	-	na	2.4E+01	5.6E+02	na	1.4E+03	2.4E+01	5.6E+02	na	1.4E+03	2.4E+01	5.6E+02	na	-	-	-	-	na	1.4E+03	2.4E+01	5.6E+02	na	1.4E+03	
Dieethyl Phthalate	0	-	-	na	1.2E+05	-	-	na	1.2E+05	-	-	na	1.2E+05	-	-	-	-	-	-	na	1.2E+05	-	-	na	1.2E+05	
Di-2-Ethylhexyl Phthalate <sup>c</sup>	0	-	-	na	5.9E+01	-	-	na	5.9E+01	-	-	na	5.9E+01	-	-	-	-	-	-	na	5.9E+01	-	-	na	5.9E+01	
2,4-Dimethylphenol	0	-	-	na	2.3E+03	-	-	na	2.3E+03	-	-	na	2.3E+03	-	-	-	-	-	-	na	2.3E+03	-	-	na	2.3E+03	
Dimethyl Phthalate	0	-	-	na	2.9E+06	-	-	na	2.9E+06	-	-	na	2.9E+06	-	-	-	-	-	-	na	2.9E+06	-	-	na	2.9E+06	
Di-n-Butyl Phthalate	0	-	-	na	1.2E+04	-	-	na	1.4E+04	-	-	na	1.4E+04	-	-	-	-	-	-	na	1.4E+04	-	-	na	1.4E+04	
2,4-Dinitrophenol	0	-	-	na	7.65E+02	-	-	na	7.65E+02	-	-	na	7.65E+02	-	-	-	-	-	-	na	7.65E+02	-	-	na	7.65E+02	
2,4-Dinitrotoluene <sup>c</sup>	0	-	-	na	9.1E+01	-	-	na	9.1E+01	-	-	na	9.1E+01	-	-	-	-	-	-	na	9.1E+01	-	-	na	9.1E+01	
Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin) (ppq)	0	-	-	na	1.2E+06	-	-	na	1.2E+06	-	-	na	1.2E+06	-	-	-	-	-	-	na	1.2E+06	-	-	na	1.2E+06	
1,2-Diphenylhydrazine <sup>c</sup>	0	-	-	na	5.4E+00	-	-	na	5.4E+00	-	-	na	5.4E+00	-	-	-	-	-	-	na	5.4E+00	-	-	na	5.4E+00	
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	-	-	-	-	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	-	-	-	-	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	-	-	-	-	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01
Endrin	0	-	-	na	1.8E+00	-	-	na	1.8E+00	-	-	na	1.8E+00	-	-	-	-	-	-	na	1.8E+00	-	-	na	1.8E+00	

Parameter	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWWS)	HH	Acute	Chronic	HH (PWWS)	HH	Acute	Chronic	HH (PWWS)	HH	Acute	Chronic	HH (PWWS)	HH	Acute	Chronic	HH (PWWS)	HH
(ug/L unless noted)																					
Ethylbenzene	0	-	-	na	2.9E+04	-	-	na	2.9E+04	-	-	-	-	-	-	-	-	-	-	2.9E+04	
Fluoranthene	0	-	-	na	3.7E+02	-	-	na	3.7E+02	-	-	-	-	-	-	-	-	-	-	3.7E+02	
Fluorene	0	-	-	na	1.4E+04	-	-	na	1.4E+04	-	-	-	-	-	-	-	-	-	-	1.4E+04	
Foaming Agents	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	
Gutmann	0	-	1.0E-02	na	-	-	-	na	1.0E-02	na	-	-	-	-	-	-	-	-	-	-	
Heptachlor	c	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	-	-	-	-	-	-	-	-	-	5.2E-01	3.8E-03
Heptachlor Epoxide	c	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	-	-	-	-	-	-	-	-	-	5.2E-01	3.8E-03
Hexachlorobenzene	c	0	-	-	na	7.7E-03	-	-	na	7.7E-03	-	-	-	-	-	-	-	-	-	7.7E-03	
Hexachlorobutadiene	c	0	-	-	na	5.0E-02	-	-	na	5.0E-02	-	-	-	-	-	-	-	-	-	5.0E-02	
Hexachlorocyclohexane																					
Alpha-BHC <sup>c</sup>	0	-	-	na	1.3E-01	-	-	na	1.3E-01	-	-	-	-	-	-	-	-	-	-	1.3E-01	
Beta-BHC	c	0	-	-	na	4.6E-01	-	-	na	4.6E-01	-	-	-	-	-	-	-	-	-	4.6E-01	
Hexachlorocyclohexane																					
Gamma-BHC <sup>c</sup> (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	-	na	6.3E-01	-	-	-	-	-	-	-	-	-	-	6.3E-01	
Heptachlorocyclopentadiene	0	-	-	na	1.7E+04	-	-	na	1.7E+04	-	-	-	-	-	-	-	-	-	-	1.7E+04	
Hexachloroethane	c	0	-	-	na	8.9E+01	-	-	na	8.9E+01	-	-	-	-	-	-	-	-	-	8.	
Hydrogen Sulfide	0	-	2.0E+00	na	-	-	2.0E+00	na	-	2.0E+00	-	-	-	-	-	-	-	-	-	2.0E+00	
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	-	-	na	4.9E-01	-	-	na	4.9E-01	-	-	-	-	-	-	-	-	-	-	4.9E-01	
Iron	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	
Ispophorone <sup>c</sup>	0	-	-	na	2.6E-04	-	-	na	2.6E-04	-	-	-	-	-	-	-	-	-	-	2.6E+04	
Kepone	0	-	0.0E+00	na	-	-	0.0E+00	na	-	0.0E+00	-	-	-	-	-	-	-	-	-	0.0E+00	
Lead	0	5.3E+01	6.0E+00	na	-	5.3E+01	6.0E+00	na	-	5.3E+01	6.0E+00	-	-	-	-	-	-	-	-	5.3E+01	6.0E+00
Malathion	0	-	1.0E-01	na	-	-	1.0E-01	na	-	-	1.0E-01	na	-	-	-	-	-	-	-	1.0E-01	
Manganese	d	-	-	na	-	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	-	-	-	-	-	-	-	-	-	-	5.1E-02	
Methyl Bromide	0	-	-	na	4.0E+03	-	-	na	4.0E+03	-	-	-	-	-	-	-	-	-	-	4.0E+03	
Metoxychlor	0	-	3.0E-02	na	-	-	3.0E-02	na	-	-	3.0E-02	na	-	-	-	-	-	-	-	3.0E-02	
Mirex	0	-	0.0E+00	na	-	-	0.0E+00	na	-	-	0.0E+00	na	-	-	-	-	-	-	-	0.0E+00	
Monochlorobenzene	0	-	-	na	2.1E+04	-	-	na	2.1E+04	-	-	-	-	-	-	-	-	-	-	2.1E+04	
Nickel	0	1.1E+02	1.2E+01	na	4.6E+03	-	1.1E+02	1.2E+01	na	4.6E+03	-	-	-	-	-	-	-	-	-	4.6E+03	
Nitrate (as N)	0	-	-	na	-	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	
Nitroarobenzene	0	-	-	na	1.9E+03	-	-	na	1.9E+03	-	-	-	-	-	-	-	-	-	-	1.9E+03	
N-Nitrosodimethylamine <sup>c</sup>	0	-	-	na	8.1E+01	-	-	na	8.1E+01	-	-	-	-	-	-	-	-	-	-	8.1E+01	
N-Nitrosodiphenylamine <sup>c</sup>	0	-	-	na	1.6E+02	-	-	na	1.6E+02	-	-	-	-	-	-	-	-	-	-	1.	
N-Nitrosodipropylamine <sup>c</sup>	0	-	-	na	1.4E+01	-	-	na	1.4E+01	-	-	-	-	-	-	-	-	-	-	1.4E+01	
Parathion	0	6.5E-02	1.3E-02	na	-	-	6.5E-02	1.3E-02	na	-	-	-	-	-	-	-	-	-	-	6.5E-02	
PBBA-1016	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1221	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1232	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1242	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1248	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1254	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PBBA-1260	0	-	1.4E-02	na	-	-	1.4E-02	na	-	-	-	-	-	-	-	-	-	-	-	1.4E-02	
PCBs Total <sup>c</sup>	0	-	-	na	1.7E-03	-	-	na	1.7E-03	-	-	-	-	-	-	-	-	-	-	1.7E-03	

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol <sup>c</sup>	0	1.4E+01	1.1E+01	na	8.2E+01	1.4E+01	1.1E+01	na	8.2E+01	-	-	-	-	-	-	-	1.4E+01	1.1E+01	na	8.2E+01	
Phenol	0	-	-	na	4.6E+06	-	-	na	3.4E+07	-	-	-	-	-	-	-	-	-	-	3.4E+07	
Pyrene	0	-	-	na	1.1E+04	-	-	na	8.2E+04	-	-	-	-	-	-	-	-	-	-	8.2E+04	
Radionuclides (pCi/l) except Beta/Photon	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	-
Gross Alpha Activity	0	-	-	na	1.5E+01	-	-	na	1.1E+02	-	-	-	-	-	-	-	-	-	-	1.1E+02	
Beta and Photon Activity (mrem/yr)	0	-	-	na	4.0E+00	-	-	na	3.0E+01	-	-	-	-	-	-	-	-	-	-	-	
Stronium-90	0	-	-	na	8.0E+00	-	-	na	6.0E+01	-	-	-	-	-	-	-	-	-	-	6.0E+01	
Tritium	0	-	-	na	2.0E+04	-	-	na	1.5E+05	-	-	-	-	-	-	-	-	-	-	1.5E+05	
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	8.2E+04	-	-	-	-	-	-	-	2.0E+01	5.0E+00	na	8.2E+04	
Silver	0	1.1E+00	-	na	-	1.1E+00	-	na	-	-	-	-	-	-	-	-	1.1E+00	-	na	-	
Sulfate	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-	
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	-	-	na	1.1E+02	-	-	na	1.1E+02	-	-	-	-	-	-	-	-	-	-	1.1E+02	
Tetrachloroethylene <sup>c</sup>	0	-	-	na	8.9E+01	-	-	na	8.9E+01	-	-	-	-	-	-	-	-	-	-	8.9E+01	
Thallium	0	-	-	na	6.3E+00	-	-	na	4.7E+01	-	-	-	-	-	-	-	-	-	-	4.7E+01	
Toluene	0	-	-	na	2.0E+05	-	-	na	1.5E+06	-	-	-	-	-	-	-	-	-	-	1.5E+06	
Total dissolved solids	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	
Toxephene <sup>c</sup>	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	-	-	-	-	-	-	-	7.3E-01	2.0E-04	na	7.5E-03	
Tributyltin	0	4.6E-01	6.3E-02	na	-	4.6E-01	6.3E-02	na	-	-	-	-	-	-	-	-	4.6E-01	6.3E-02	na	-	
1,2,4-Trichlorobenzene	0	-	-	na	9.4E+02	-	-	na	7.0E+03	-	-	-	-	-	-	-	-	-	-	7.0E+03	
1,1,2-Trichloroethane <sup>c</sup>	0	-	-	na	4.2E+02	-	-	na	4.2E+02	-	-	-	-	-	-	-	-	-	-	4.2E+02	
Trichloroethylene <sup>c</sup>	0	-	-	na	8.1E+02	-	-	na	8.1E+02	-	-	-	-	-	-	-	-	-	-	8.1E+02	
2,4,6-Trichlorophenol <sup>c</sup>	0	-	-	na	6.5E+01	-	-	na	6.5E+01	-	-	-	-	-	-	-	-	-	-	6.5E+01	
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl Chloride <sup>c</sup>	0	-	-	na	6.1E+01	-	-	na	6.1E+01	-	-	-	-	-	-	-	-	-	-	6.1E+01	
Zinc	0	6.8E+01	6.9E+01	na	6.9E+04	6.8E+01	6.9E+01	na	5.1E+05	-	-	-	-	-	-	-	6.8E+01	6.9E+01	na	5.1E+05	

## Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise

2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipal

3. Metals measured as Dissolved, unless specified otherwise

4. "C" indicates a carcinogenic parameter

5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.

Antidegradation WLAs are based upon a complete mix.

6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic

= (0.1(WQC - background conc.) + background conc.) for human health

7. WLAs established at the following stream flows: 1Q10 for Acute, 3Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 3QQ5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	3.2E+04
Arsenic	9.0E+01
Barium	na
Cadmium	4.1E-01
Chromium III	2.6E+01
Chromium VI	6.4E+00
Copper	2.9E+00
Iron	na
Lead	3.6E+00
Manganese	na
Mercury	3.8E-01
Nickel	7.1E+00
Selenium	3.0E+00
Silver	4.6E-01
Zinc	2.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

# 2004 Zinc Stats.exe

7/13/04 4:45:53 PM

Facility = Montross Westmoreland WWTP  
Chemical = Zinc  
Chronic averaging period = 4  
WLAA = 68 ug/l  
WLAC = 68 ug/l  
Q.L. = 5.0 ug/l  
# samples/mo. = 1  
# samples/wk. = 1

## Summary of Statistics:

# observations = 1  
Expected Value = 110  
Variance = 4356  
C.V. = 0.6  
97th percentile daily values = 267.675 ug/l  
97th percentile 4 day average = 183.016 ug/l  
97th percentile 30 day average= 132.665 ug/l  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity  
Maximum Daily Limit = 68  
Average Weekly limit = 68  
Average Monthly Limit = 68

The data are:

110 ug/l

# 2004 Copper Stats.exe

7/14/04 8:45:20 AM

Facility = Montross Westmoreland  
Chemical = Copper  
Chronic averaging period = 4  
WLAA = 7.3 ug/l  
WLAC = 5.2 ug/l  
Q.L. = 5.0 ug/l  
# samples/mo. = 1  
# samples/wk. = 1

## Summary of Statistics:

# observations = 1  
Expected Value = 11  
Variance = 43.56  
C.V. = 0.6  
97th percentile daily values = 26.7675 ug/l  
97th percentile 4 day average = 18.3016 ug/l  
97th percentile 30 day average= 13.2665 ug/l  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity  
Maximum Daily Limit = 7.3 ug/l  
Average Weekly limit = 7.3 ug/l  
Average Monthly LImit = 7.3 ug/l

The data are:

11 ug/l

**Attachment H: Stream Sanitation Memorandum**

## MEMORANDUM

**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**Piedmont Regional Office**  
**4949-A Cox Road Glen Allen, Virginia 23060**

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**SUBJECT:** Stream Sanitation Analysis  
Montross-Westmoreland WWTP - VA0072729

**TO:** Janine Howard

**FROM:** Jennifer Palmore, P.G.

**DATE:** November 18, 2011

**COPIES:** Modeling File

A stream sanitation request was received for the Montross-Westmoreland wastewater treatment plant (WWTP), which is located in Westmoreland County near Stony Hill, VA.

The current limits for the facility were assigned in 1995 when the facility requested an expansion from a permitted flow of 0.025 MGD to 0.1 MGD. At that time, the facility had not yet been constructed. The facility was assigned limits of 10 mg/L cBOD<sub>5</sub>, 10 mg/L total suspended solids (TSS), 3.0 mg/L total Kjeldahl nitrogen (TKN) and a minimum dissolved oxygen limit of 5.0 mg/L as recommended by D.X. Ren on 4/12/1995 (see attached memorandum). These limits were based on best professional judgment because the receiving stream was determined to be unmodelable due to its swampy characteristics. However, during the 2011 permit reissuance it was determined that the 1995 analysis only addressed a design flow of 0.1 MGD although the current permit authorizes a discharge of 0.13 MGD. Based on this information, permitting staff submitted a request for an updated analysis.

Subsequent review of the past analysis also uncovered that the 1995 memorandum addressed a different outfall location than what was constructed. The correct outfall location was confirmed by the facility staff on November 10, 2011. The facility discharges to Ruin Branch at rivermile 3-RUN000.48. Ruin Branch is a tributary to Cat Point Creek in the Rappahannock Basin and is located in watershed VAP-E23R.

The Cat Point Creek watershed, including Ruin Branch, is classified as Class VII swampwaters. The swampy characteristics of the receiving streams are confirmed by D.X. Ren's memorandum as well as aerial photography and topographic quadrangle maps of the site. As swampwaters are unmodelable using the Regional Model 4.2, the following limits are recommended based on A.J. Anthony's March 9, 1987 memorandum "Advisory Notification of Effluent Limits for Swamp and Marsh Waters" and are considered representative of a "self-sustaining" effluent:

<b>Flow (Q)</b>	0.13 MGD
<b>cBOD<sub>5</sub></b>	10 mg/L
<b>TSS</b>	10 mg/L
<b>TKN</b>	3.0 mg/L

In addition, a minimum dissolved oxygen limit of 5.0 mg/L is recommended.

If you have any questions or need any additional information, please do not hesitate to contact me.



Attachment  
3 pages

## MEMORANDUM

### DEPARTMENT OF ENVIRONMENTAL QUALITY Piedmont Regional Office

4900 Cox Road Glen Allen, VA 23060

804/527-5020

**SUBJECT:** Proposed Effluent Limits for Montross STP

**TO:** Curt Linderman

**FROM:** D. X. Ren *DX*

**DATE:** April 12, 1995

**Copies:** Denise Mosca, Jon van Soestbergen, Technical Services, File

**RECEIVED**  
APR 17 1995

Town of Montross STP (VA0072729) proposed to increase the discharge flow from 0.025 MGD to 0.1 MGD and relocate the current discharge point 0.4 mile downstream from the previous one (New Outfall: RM: XCN000.20, Lat/Long: 370507/0765015, see topo map attached). Two site inspections were performed by the PRO/KRO group on June 21, 1993 and March 29, 1995. The 1993 site inspections revealed that the proposed discharge point is in the swamp area. A half of a mile downstream is Cat Point Creek where the typical swamp characteristics were found. Therefore, the receiving stream was determined to be a swamp. The swamp characteristics observed are irregular channel, tannic-color water, no observed velocities, and abundant vegetation in the form of roots, trees, bushes and stumps in the dry season.

It is my recommendation that the swamp effluent limits apply directly to the proposed discharge point, i.e.

Q	= 0.10 MGD
CBOD <sub>5</sub>	= 10.0 mg/l
TSS	= 10.0 mg/l
TKN	= 3.0 mg/l
DO	= 5.0 mg/l
Cl <sub>2</sub>	= 0.011 mg/l

DO limit was raised to 5.0 mg/l based on the information provided by Mark Alling of the Technical Services Department regarding the fishery spawning to support aquatic habits. Cat Point Creek has an anadromous fishery spawning run (herring in March and April) upstream to Chandler's Millpond. Therefore, DO was raised from 3.0 mg/l to 5.0 mg/l.

Note that the Town of Montross STP has never been built yet. No time frame has been set for the plant construction schedule.

The anti-backsliding policy does not apply here since the permit modification is caused by plant expansion (i.e. increase discharge flow), relocation of the discharge point or new information available for the receiving stream.

Because the receiving stream is a swamp, the Tier 1 water was determined for this case.

If you have any questions, please contact me.